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ABSTRACT

This report examines minority undergraduate enrollment and completion trends at American colleges and universities. Chapter 1 focuses on general undergraduate enrollment trends, finding that between 1976 and 1990 the number of minority undergraduates grew faster than total enrollment, with Blacks as the only minority group whose percentage increase did not exceed that of Whites. Chapter 2 addresses the differences between Whites and Blacks in enrollment in four-year and two-year degree-granting institutions, while Chapter 3 makes a similar comparison with respect to enrollment in proprietary schools. The analysis found that the proportion of Whites and Blacks attending two-year and four-year colleges and universities did not change significantly between 1976 and 1990, although minority enrollment at proprietary schools increased from 14 to 25 percent between 1976 and 1990. Chapter 4 examines college persistence and completion rates, finding that Hispanic and Black persistence rates increased significantly since the 1970s, approaching those of Whites. Policies designed to increase minority enrollment should focus on providing assured access, targeting student aid more precisely, and increasing student support services. Three appendixes provide information on age-standardized enrollment rates, supplemental tables, and entry and persistence rates in postsecondary education. (MDM)

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UNDERGRADUATE ENROLLMENT AND COMPLETION AMONG MINORITIES

February 1992

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February 1992

CONGRESSIONAL BUDGET OFFICE
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PREFACE

At the request of the Senate Committee on Labor and Human Resources, this paper examines the participation of minority students in postsecondary education and presents selected options for increasing their enrollment and completion rates. In accordance with the Congressional Budget Office's (CBO's) mandate to provide objective and impartial analysis, the paper contains no recommendations.

Jay Noell of CBO's Human Resources and Community Development Division prepared the paper under the direction of Nancy Gordon and Bruce Vavrichek. The author gratefully acknowledges the contributions of Amy Belasco, Roslyn Bruno, Robert Hauser, Robert Kominsky, Harriet Komisar, Constance Rhind, Paul Siegel, and Verdon Staines. Tahirih Senne provided computer assistance. The manuscript was edited by Roger M. Williams. Ronald Moore provided administrative assistance for the project and prepared the final layout of the manuscript. Kimberly Guise produced the figures.

Robert D. Reischauer
Director

February 1992

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SUMMARY

Minority participation in postsecondary education has been a major issue in recent years. Although the number of minority undergraduates increased in the last half of the 1980s, the proportion of minorities attending postsecondary schools remains substantially below that of whites. (Minorities in this context means blacks, Hispanics, Asians, and American Indians.)

ENROLLMENT TRENDS

In 1990, the enrollment rate of black youth of traditional college age returned to about the level it had reached in 1976 (see Summary Figure). The gap between the enrollment rates of black and white youths was greater in 1990 than in 1976, however, because the rate for whites increased steadily in the 1980s. The college enrollment rate for Hispanics was stable in the 1980s, but at a level below that in 1975.

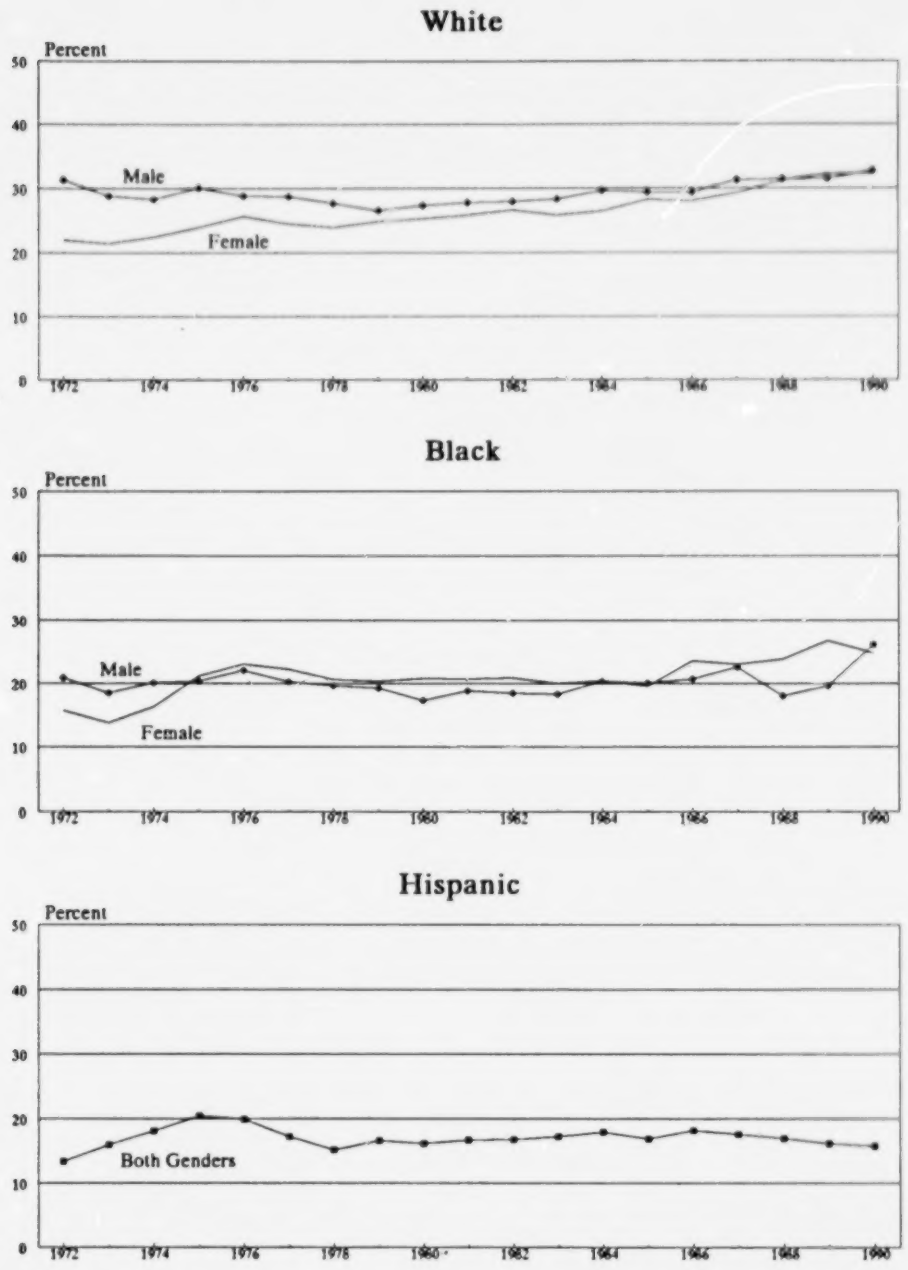
A major portion of the growing disparity in the enrollment patterns of whites and minorities stems from enrollment increases among white women. Gender differences in postsecondary enrollment also exist among minorities, where women have generally increased their presence more than men since the mid-1970s. Also since then, enrollment among blacks has been higher, on average, for women than for men.

CHOICE OF POSTSECONDARY INSTITUTION

Limited improvement in access to higher education for minorities is not the only concern about their postsecondary participation. For one thing, minority students--a disproportionate share of whom have low incomes--may be increasingly likely to have to settle for the less costly types of schools.

Three broad choices among institutions are available to undergraduate students: four-year colleges leading to bachelor's degrees; two-year institutions leading to associate degrees; and proprietary schools (also known as private career schools, which specialize in trade, vocational, and business programs) leading to vocational certificates. Four-year institutions and proprietary schools generally cost more than their two-year counterparts. The type of

Summary Figure.
College Enrollment as a Percentage of 18– to 24–Year Olds, by Race/ Ethnicity and Gender, October 1972 to October 1990



SOURCE: Congressional Budget Office tabulations based on data from the Bureau of the Census, Current Population Report, Series P–20, No. 452.

school from which students graduate has important consequences for their future earnings. Graduates with bachelor's degrees earn the most, followed by those with associate degrees and then those with vocational certificates.

Observers have expressed concern that minority students may increasingly have to enroll in two-year schools because they cost the least. When examining undergraduate enrollment at four-year and two-year schools, however, this report finds that the proportion of whites and minorities choosing each type of school has not changed much. The white share attending two-year schools increased slightly over the 1976-1990 period, but the minority share remained essentially static.

In contrast, another source of data indicates that minorities have increased their share of proprietary school enrollment since the mid-1970s--from 14 percent to 25 percent between 1976 and 1990, for example. Although some observers have applauded proprietary schools for providing training for a range of jobs currently in demand, others have questioned both the quality of the instruction offered at many of these institutions and the extent to which they improve students' employment prospects.

PERSISTENCE AND COMPLETION

Yet another concern about minority participation is that many minority youth who attend postsecondary schools do not graduate. Some analysts have suggested that minority--especially black--enrollment may have increased less than expected not because fewer blacks were entering college, but because they were less likely to stay there ("persist"). This report finds that both entry and persistence rates for college-age whites are higher than those for minorities. Among young blacks, entry rates dipped between the mid-1970s and late 1980s, and by 1990 they were only slightly above the level reached in 1976. Persistence rates have increased among blacks since 1972, however, and by 1990 had almost reached the level among whites. College-age Hispanic entry rates have remained level since 1980, while persistence rates rose and are now similar to those of whites. These findings are based on average rates, however; at some schools, persistence rates may have declined.

Whites and minorities also differ in the proportion who have completed at least two or four years of college. In 1990, about 40 percent of whites between the ages of 25 and 29 had completed two or more years, compared with less than 30 percent of blacks and less than 20 percent of Hispanics. In that year, about 25 percent of whites aged 25 to 29 had finished four or more years, compared with less than 15 percent of blacks and less than 10 percent of Hispanics.

POLICY OPTIONS TO INCREASE MINORITY UNDERGRADUATE ENROLLMENT

Because the participation of minorities in postsecondary education remains below that of whites, the Congress may want to consider new policy initiatives to increase the entry and persistence rates of minority youth. Three basic approaches have been suggested.

The first would assure students as early as their late elementary years that financial assistance would be available for them to enter college if they completed high school. Proponents of tuition-guarantee programs point to preliminary evidence that demonstration projects have increased enrollment among disadvantaged students at relatively low costs. Opponents counter that rigorous evaluations of these projects have not been done and that their initial success may be due to the exceptional dedication of their creators, which might not be duplicated in a national program.

The second approach would address financial need by targeting federal student aid more tightly toward the most economically disadvantaged, who tend disproportionately to be members of minority groups. Those in favor of this option contend that additional aid would increase college entry among disadvantaged youth and ensure them greater choice among different types of postsecondary institutions. Those opposed argue that additional support for the most economically disadvantaged students is unlikely to be very effective in increasing college participation since enrollment rates are already at their highest levels ever.

The third approach would expand the current federal program of support services for disadvantaged college students in order to boost college persistence. Advocates of expanding this program note that it provides postsecondary schools with a range of alternative services--including tutoring and counseling--to meet the unique needs of disadvantaged students. Opponents say these programs have not been effectively managed in the past and have produced only negligible results in community colleges, which many disadvantaged students attend.

An additional consideration is that all three of these strategies could require more federal spending. Under the Budget Enforcement Act, additional funding for one program would require offsetting changes to meet the caps on discretionary spending.

CHAPTER I

INTRODUCTION

Trends in the participation of minorities in postsecondary education have received considerable scrutiny in the last several years. Because equal opportunity for postsecondary education has been widely supported over the past two decades, many observers expected the enrollment patterns of whites and minorities to converge. That has not happened, however, and several recent studies have tried to identify more precisely how postsecondary participation differs between whites and minorities.[1]

These studies have allayed concerns in some areas but raised questions in others. Among their key findings is that the overall postsecondary enrollment rate of black youth of traditional college age (18 to 24 years old) changed little between the mid-1970s and mid-1980s. Two factors have been cited: the high-school graduation rate among black youth rose, while the college enrollment rate of those graduates declined. Research has also confirmed that enrollment rates among white youth increased in the 1980s, resulting in a growing difference in postsecondary attendance between whites and blacks of traditional college age. Much of the increasing disparity stems from enrollment growth among white women. Indeed, changes in gender differences were greater than changes in racial differences over the past two decades.

After updating information found in recent reports on trends in undergraduate enrollment, this paper will turn to several specific issues. The first is the fear that minorities may be increasingly likely to enroll in academic and vocational institutions of lower quality. Chapter II examines differences between whites and minorities in enrollment in four-year and two-year postsecondary institutions that grant degrees. Chapter III makes a similar comparison with respect to enrollment in proprietary schools (for-profit institutions that specialize in trade, business, and vocational programs).

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1. See Sol H. Pelavin and Michael B. Kane, *Minority Participation in Higher Education*, U.S. Department of Education, August 1990; Daniel Koretz, *Trends in the Postsecondary Enrollment of Minorities*, The RAND Corporation, Santa Monica, Cal., August 1990; Thomas G. Mortenson and Zhijun Wu, *High School Graduation and College Participation of Young Adults by Family Income Background: 1970 to 1989*, American College Testing Program, September 1990; and James B. Stedman, *Minority Enrollment Trends in Higher Education*, CRS Report for Congress, 91-460 EPW, May 31, 1991.

A second issue concerns suggestions by some analysts that minority (especially black) enrollment may have grown less than expected--not because fewer blacks were entering college but because they were increasingly less likely to stay in college ("persist") and graduate once they entered. Chapter IV considers that issue, developing postsecondary entry and persistence rates in order to compare trends among minorities and whites.

Because relatively fewer minorities than whites enroll in regular postsecondary institutions, one would also expect the proportion of minorities who ever earn a degree to be lower than that of whites. Chapter V documents those differences for two-year (associate) and four-year (bachelor's) degrees. Finally, Chapter VI explores some possible Congressional strategies for addressing the continuing disparities between white and minority enrollment.

TRENDS IN THE NUMBER OF UNDERGRADUATES

Between 1976 and 1990, the number of minority undergraduates grew faster than total enrollment--but with blacks the only minority group whose percentage increase did not exceed that of whites.[2] Gender differences were also important, with female enrollment increasing more than male among all examined racial/ethnic groups.

Overall, undergraduate enrollment in four-year and two-year postsecondary institutions increased 25 percent between fall 1976 and fall 1990, rising from about 9.3 million to 11.6 million (see Figure 1 and Appendix Table B-1). Minority undergraduate enrollment--consisting of black, Hispanic, Asian/Pacific Islander, and American Indian/Alaskan Native students--increased 57 percent, about three times the growth in white enrollment. As a result, the white proportion of undergraduate students declined from 83 percent to 79 percent.

Undergraduate enrollment among all minority groups except blacks increased faster than enrollment by whites. Black undergraduate enrollment fluctuated between 1976 and 1990, but increased 19 percent by the end of the period. Asian/Pacific Islanders had the largest growth in enrollment (almost 190 percent), followed by Hispanics (almost 100 percent) and American Indian/Alaskan Natives (more than 35 percent).

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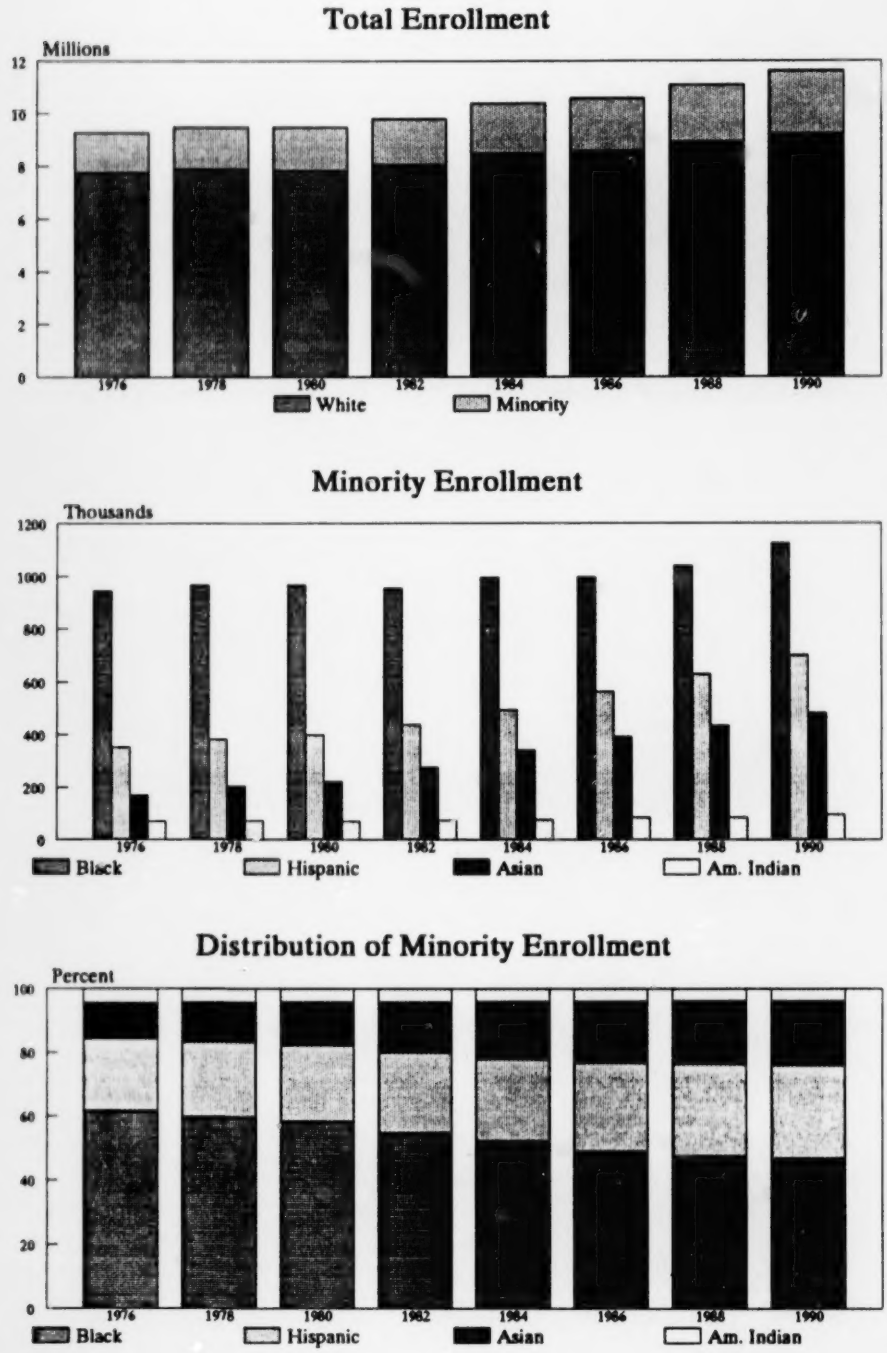
2. Data on undergraduate enrollment come from the Department of Education's periodic surveys of postsecondary institutions. Since 1987, these surveys have been part of what is known as the Integrated Postsecondary Education Data System; before that, they were part of the Higher Education General Information Surveys.

Figure 1.
Undergraduate Enrollment by Race/Ethnicity, Fall 1976 to Fall 1990



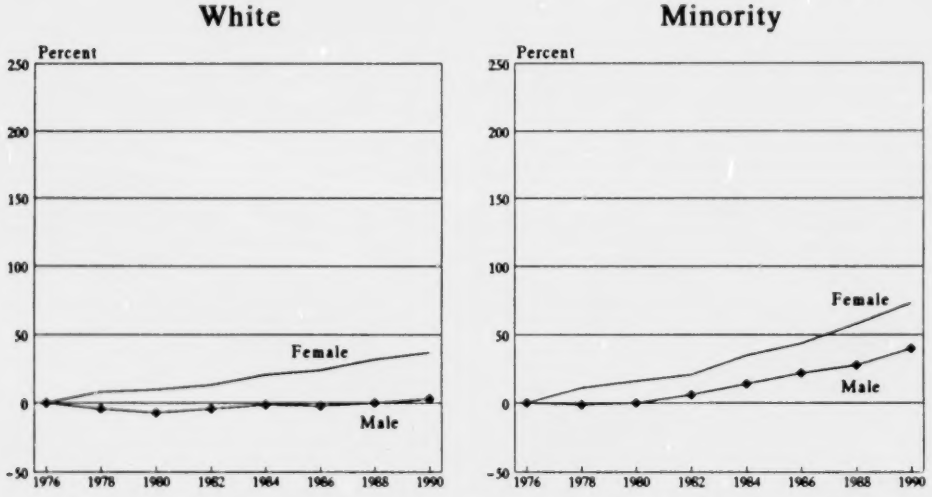
SOURCE: Congressional Budget Office tabulations based on data from the Department of Education, National Center for Education Statistics.

NOTE: See Appendix B, Table B-1 for data for 1976 and 1990.

As a result of the different growth rates, the composition of minority enrollment shifted over the 1976-1990 period. Black enrollment fell from more than 60 percent of minority enrollment to less than 50 percent. The shares of Hispanic and Asian enrollment grew, and the share of American Indians declined slightly.

Female undergraduate enrollment increased faster than male in every group. Among whites, it increased more than 35 percent, while male enrollment increased less than 5 percent (see Figures 2 and 3). Among minorities, a similar difference between the two sexes developed, with female enrollment up more than 70 percent and male enrollment up 40 percent.

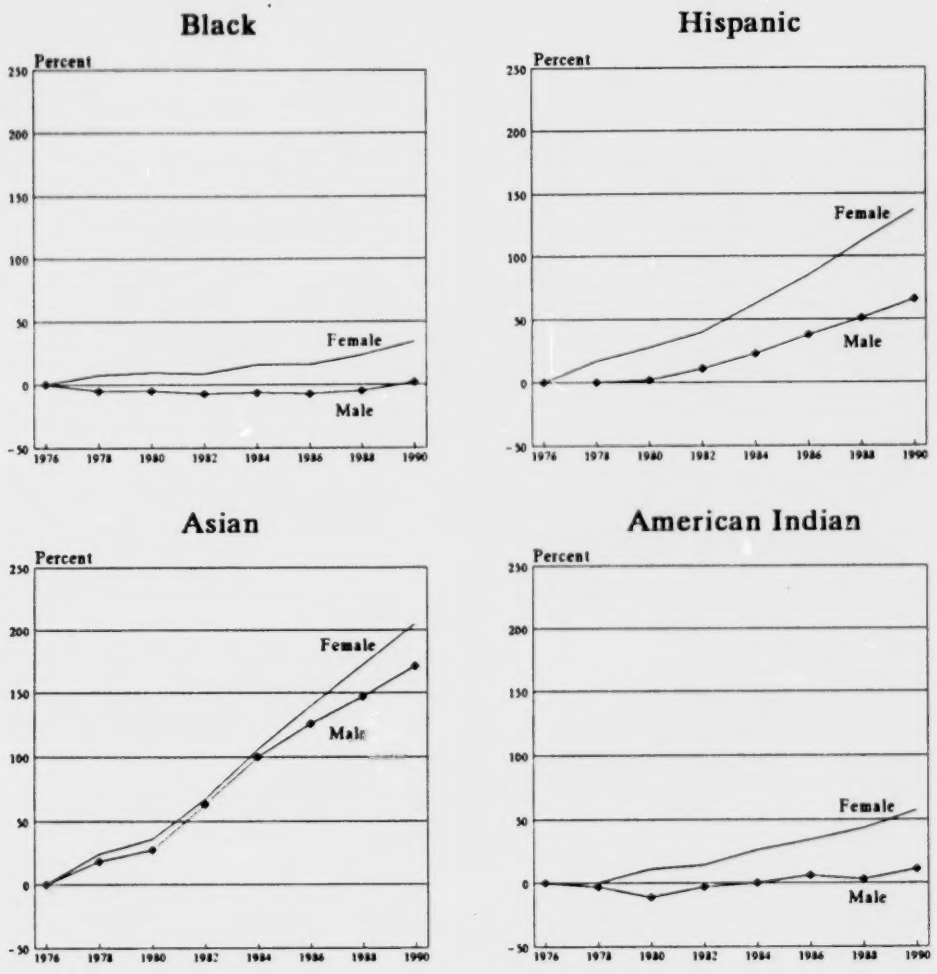
Figure 2.
Cumulative Percentage Change in Undergraduate Enrollment Since 1976, by Minority Status and Gender, Fall 1976 to Fall 1990



SOURCE: Congressional Budget Office tabulations based on data from the Department of Education, National Center for Education Statistics.

NOTE: See Appendix B, Table B-1 for data for 1976 and 1990.

Figure 3.
Cumulative Percentage Change in Minority Undergraduate Enrollment Since 1976, by Race/Ethnicity and Gender, Fall 1976 to Fall 1990



SOURCE: Congressional Budget Office tabulations based on data from the Department of Education, National Center for Education Statistics.

NOTE: See Appendix B, Table B-1 for data for 1976 and 1990.

Although the increased enrollment of minorities is consistent with efforts to increase their opportunities for postsecondary education, it does not take into account general population shifts. The large enrollment increases experienced by Asians and Hispanics, in particular, probably result both from population increases and the small proportion of them enrolled at the beginning of the period. To take changes in population into account, enrollment rates--that is, enrollment relative to population size--are examined in the next section.

TRENDS IN ENROLLMENT RATES AMONG 18- TO 24-YEAR OLDS

Trends in postsecondary enrollment rates provide at least a partial context for interpreting the changes described above in undergraduate counts during the 1970s and 1980s.[3] While those counts include students of all ages, trends in enrollment rates as analyzed here are generally based on the population of traditional college-going age. Although nontraditional undergraduates (meaning those over 24) increasingly enroll in postsecondary institutions, most students still fall between the ages of 18 and 24, probably because that group forgoes less income when not working.[4]

Between 1972 and 1990, average college enrollment as a proportion of the 18- to 24-year-old population was highest among whites at 28 percent, followed by blacks at 21 percent and Hispanics at 17 percent. The white enrollment rate increased steadily during the 1980s, reaching 33 percent in 1990.[5] The rate for blacks fluctuated more than for whites, but also reached

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3. These enrollment rates come from the Current Population Report, Series P-20, number 452, and from unpublished tabulations of data from the Current Population Survey (CPS) prepared by the Bureau of the Census. These Census Bureau data for whites and blacks include Hispanics, who can be of any race but are predominantly white. When tabulations prepared by the Congressional Budget Office using data from the CPS are presented below, the figures are for non-Hispanic whites, non-Hispanic blacks, and Hispanics. Because of limited sample size, only whites, blacks, and Hispanics can be separately analyzed, and only whites and blacks are separately reported by gender.

4. Although the CPS collects enrollment data on people through age 34, relatively few individuals in the survey over the age of 24 are college students. Because of small sample sizes, minority enrollment cannot be accurately estimated by race/ethnicity and gender for students over 24.

5. Change in college enrollment rates among 18- to 24-year olds can occur for two reasons. One is that the age-specific rates--the rate for each year of age between 18 and 24--change over time. The second is that the age mix of 18- to 24-year olds changes. In the latter case, although the age-specific rates may be stable, having more 24-year olds and fewer 18-year olds would over time reduce the overall rate. That source of change does not seem to be a major factor during the period investigated; but see Appendix A for more details.

its highest level of 25 percent in 1990. The enrollment rate for Hispanics varied little during that period; in 1990, it stood at 16 percent--lower than for blacks and whites of similar age.

Gender differences also appear in college enrollment rates over the 1972-1990 period. The percentage of 18- to 24-year-old white women enrolled in college increased significantly and by 1990 was essentially the same as that of white men of similar age (see Figure 4). Among 18- to 24-year-old white men, the proportion enrolled started relatively high in 1972 (the military draft for the Vietnam War ended in 1973), dipped to a low point in 1979, then rose to its highest level in 1990.

Among 18- to 24-year-old blacks, men were relatively more likely than women to attend college in the early 1970s but slightly less likely during the 1980s; in 1990, however, black men were again enrolled in college at a slightly higher rate. College enrollment by black men was relatively stable over the 1972-1989 period, but it increased sharply in 1990. Among black women, college enrollment as a proportion of the population grew in the early 1970s and again in the late 1980s. By 1990, their enrollment rate stood at 25 percent, notably above their average for the period.

One can also calculate enrollment relative to the number of high school graduates rather than to population size. The former measure has often been used because high school graduates represent the population traditionally considered eligible for college. But some observers think that more postsecondary schools now enroll nongraduates considered to have the ability to benefit from postsecondary instruction. Thus high school graduates may be increasingly less representative of the pool of college applicants. Standards for high school graduation can also change over time, making college enrollment relative to the number of high school graduates less reliable than a measure based on the entire population.[6]

Although the average college enrollment rate is higher among high school graduates than among the entire population, similar patterns emerge when only those graduates are considered. For example, the college enrollment rate of 18- to 24-year-old black men who were high school graduates declined after reaching 35 percent in 1976; but that rate was relatively stable during the 1980s and rose to 34 percent in 1990. The college enrollment rate of young black women who were high school graduates also

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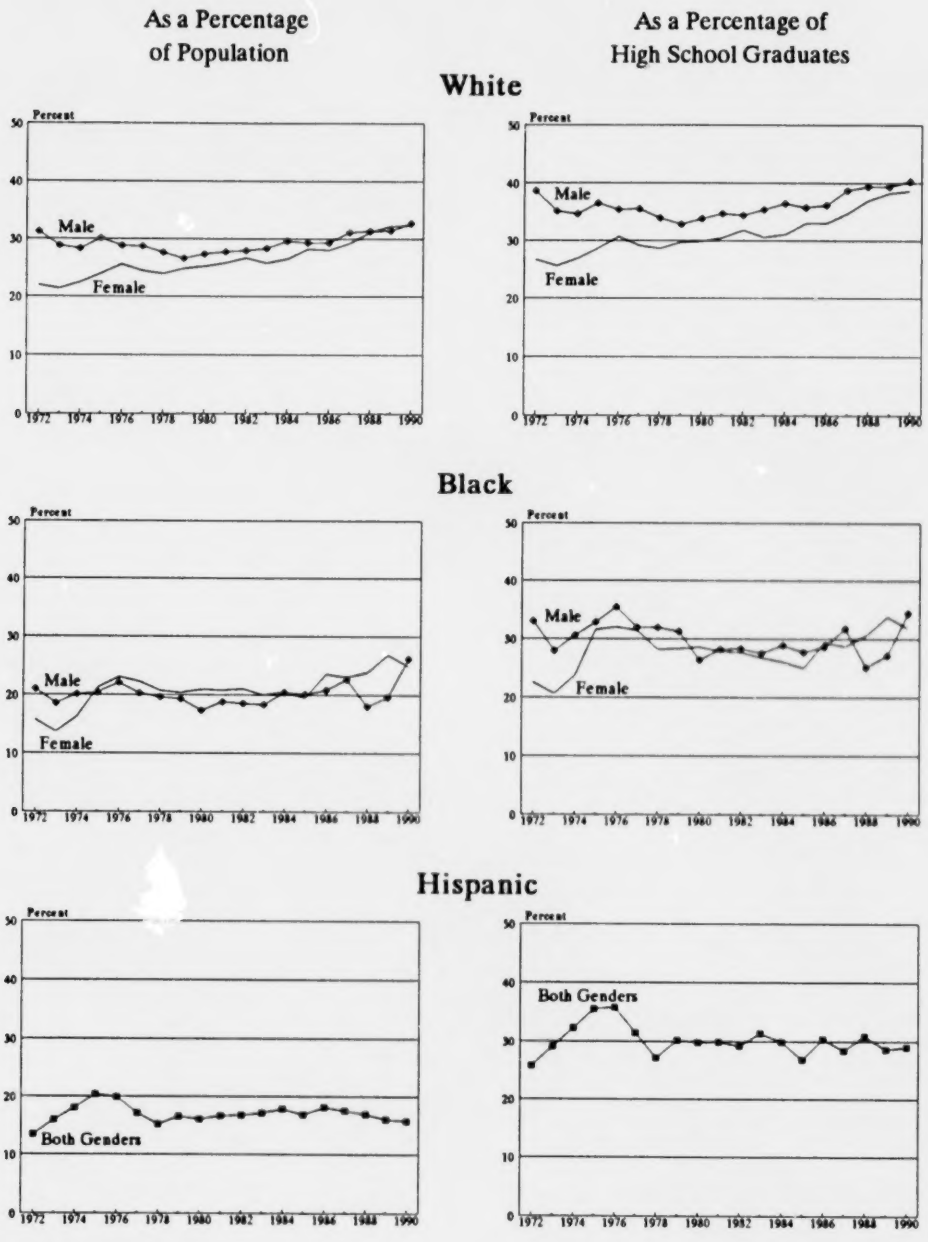
6 Achievement tests indicate, however, that proficiency levels have not declined overall and have increased among blacks and Hispanics over the period from the early 1970s to 1990. See U.S. Department of Education, National Center for Education Statistics, *Trends in Academic Progress*, November 1991.

Figure 4.
College Enrollment as a Percentage of All 18– to 24–Year Olds and as a Percentage of 18– to 24– Year–Old High School Graduates, by Race/ Ethnicity and Gender, October 1972 to October 1990



SOURCE: Congressional Budget Office tabulations based on data from the Bureau of the Census, Current Population Report, Series P–20, No. 452.

NOTE: See Appendix B, Tables B–2 and B–3 for data.

declined over that period, but started increasing in the late 1980s, reaching 32 percent in 1990.[7]

College enrollment rates of Hispanics were also relatively stable after 1979 both among 18- to 24-year olds and among those who were high school graduates. As a proportion of the population of 18- to 24-year olds, Hispanic enrollment appears to have declined slightly in the late 1980s. As a proportion of similarly aged high school graduates, Hispanic enrollment was highest in the mid-1970s, but since 1979 has varied only slightly.

The stability of enrollment rates from the mid-1970s to 1990 suggests that opportunities for minorities to attend postsecondary institutions have changed little over this period. In other words, the increasing number of undergraduates from each minority group (except for black males) primarily reflects changes in the relative sizes of population groups. The steady increase in enrollment rates of white women, however, has produced greater overall differences between whites and minorities in enrollment patterns over much of this period.

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7. Some analysts have suggested that changes in minority enlistments in the military may have affected minority enrollment in postsecondary education. Several studies have examined this issue, including Koretz, *Trends in the Postsecondary Enrollment of Minorities*. The conclusion the studies reach is that, although changes in military enlistment among blacks have been relatively large in some ways, the number of youth involved has been relatively small. As a result, the impact on trends in enrollment counts and rates has been minor over the past decade. For example, the proportion of black high school graduates between the ages of 18 and 24 who were in the military between 1976 and 1988 ranged from a low of 6 2 percent in 1976 to a high of 7.6 percent in 1979 and 1980. If the proportion had remained at the 1976 level, the number who would not have gone into the military–and hence would have been available for college–would not have reached 40,000 and would have been 22,000 or less in all but three years. These numbers constitute a small fraction of the 800,000 to 1 million black undergraduates in college each year over this period.

CHAPTER II

CHOOSING BETWEEN FOUR-YEAR AND TWO-YEAR POSTSECONDARY INSTITUTIONS

The policy of equal educational opportunity is designed to promote the goals of both access and choice in postsecondary education. Access refers to the opportunity to attend a postsecondary institution; choice, to the opportunity to select among different institutions.[1] While the goal of access may be more important, choice of institution ensures that students can select a school that best serves their needs.

Although many ways exist to categorize postsecondary institutions, basic divisions exist between nonprofit and for-profit, and, within the nonprofit sector, between four-year and two-year. Although some observers would prefer that all undergraduates have access to four-year colleges--the traditional institutions of higher education--a range of postsecondary schools has arisen to meet the increasingly diverse needs of postsecondary education. Among them, two-year institutions--especially public community colleges--are now widely seen as the basic institutions of access to postsecondary education.

From that perspective, institutions of choice include both four-year academic institutions and proprietary schools. The former can be either public or private, ranging from virtually open-admission institutions to highly selective colleges and universities. Proprietary schools, which are also called private career schools, range from small academies to correspondence schools.

This chapter examines how attendance at four-year and two-year postsecondary institutions has changed over time; the next chapter looks at trends in enrollment in private career schools. Since four-year institutions and private career schools typically cost more to attend than their two-year counterparts, most of which are public, concern exists that minority students, especially blacks, will not be able to choose to enroll in the more expensive types.

Student aid based on financial need is designed to make both access and choice possible. When a student chooses a more expensive school, however, aid is often insufficient to cover the costs of attendance beyond the

1. A third objective of equal educational opportunity is persistence. This objective can be thought of as continued access to college at higher grade levels, namely, at the sophomore level and beyond. College persistence is considered more fully in Chapter IV.

amount the student and her or his parents are judged able to pay according to formulas for allocating financial aid. As a result, attendance at more expensive institutions often means that parents and students must bear additional costs.

Some students begin at one type of school and graduate from another. But the type of school first chosen probably affects the type of school from which a final degree is awarded, and that degree can have important consequences for lifetime earnings. Census Bureau data show that, in 1987, workers with a bachelor's degree had average monthly earnings of $1,829; those with an associate degree, earnings of $1,458; and those with a vocational certificate, earnings of $1,088.

ENROLLMENT GROWTH AT FOUR-YEAR AND TWO-YEAR INSTITUTIONS

Undergraduate enrollment increased 20 percent in four-year institutions and 33 percent in two-year institutions between fall 1976 and fall 1990 (see Figure 5). In the former, undergraduate enrollment rose from 5.4 million in 1976 to 6.5 million in 1990; in the latter, from 3.8 million in 1976 to 5.1 million in 1990. (Also see Appendix Table B-1.)

In both types of institutions, minority undergraduate enrollment increased more than twice as fast as white enrollment.[2] Among four-year institutions, enrollment of whites grew by 14 percent, and enrollment among minorities--including blacks, Hispanics, Asians, and American Indians--increased by 57 percent. In two-year institutions, enrollment of whites increased 27 percent and that of minorities 57 percent.

Enrollment increases varied among minority groups but were similar at four-year and two-year institutions. At four-year schools, for example, black enrollment increased by 20 percent, Hispanic by 101 percent, Asian by 203 percent, and American Indian by 41 percent. Again, the large increases among Hispanics and Asians probably reflect both population growth and the small number enrolled at the beginning of the period.

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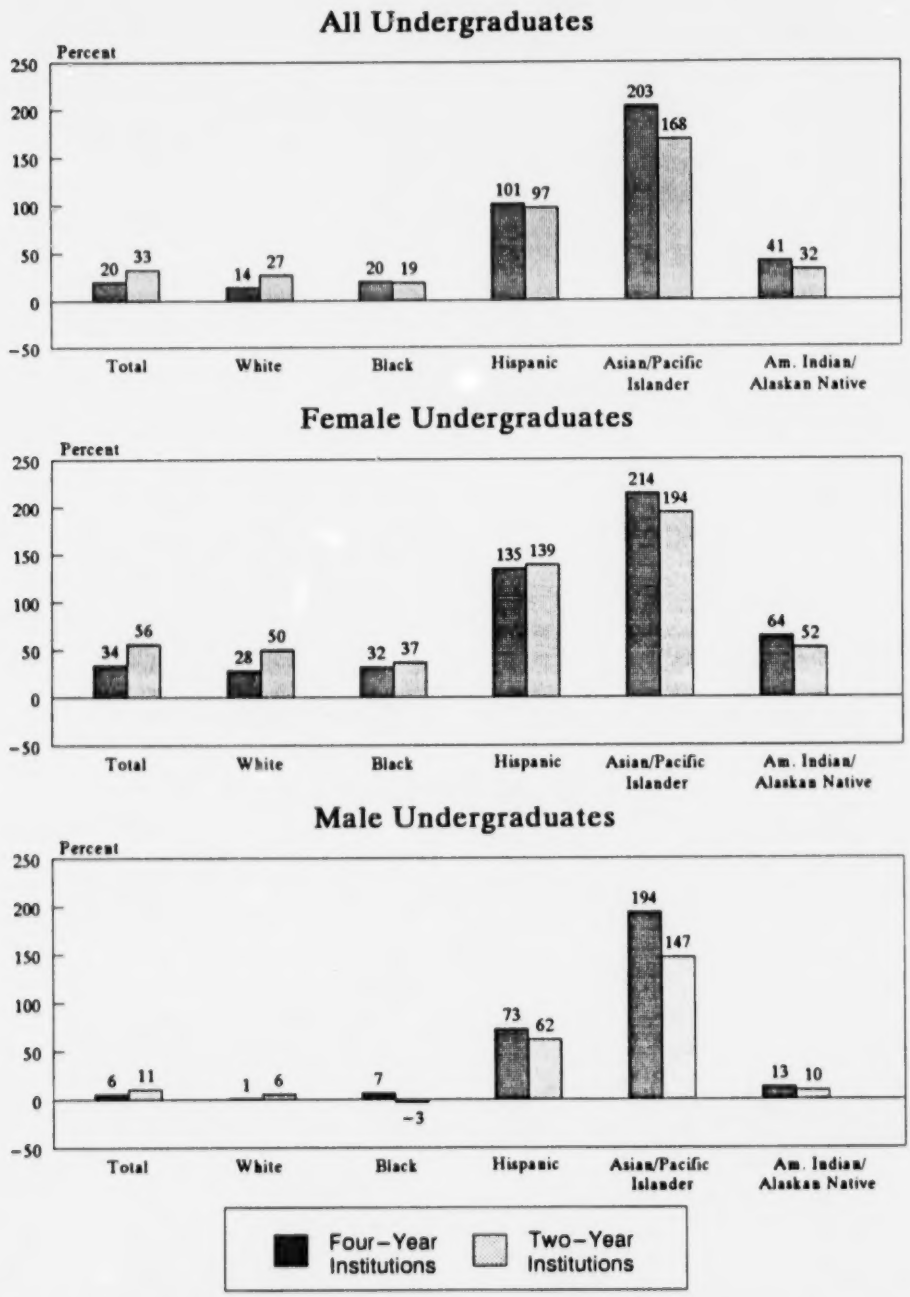
2. Data prior to 1987 come from the Department of Education's Higher Education General Information Survey (HEGIS), the predecessor to the Integrated Postsecondary Education Data System (IPEDS). Both survey systems collect administrative data from postsecondary institutions on enrollment, finances, faculty, and other matters. The two-year and four-year schools covered by HEGIS and now IPEDS include a few proprietary institutions that offer accredited programs leading to academic degrees.

Figure 5.
Percentage Change in Undergraduate Enrollment in Four–Year and Two–Year Postsecondary Educational Institutions, Fall 1976 to Fall 1990



SOURCE: Congressional Budget Office tabulations based on unpublished data from the U.S. Department of Education, National Center for Education Statistics.

NOTE: See Appendix B, Table B–1 for data.

Female enrollment grew faster than male enrollment in both four-year and two-year schools--overall and in every racial/ethnic group. Among whites, female enrollment increased significantly across the board, while male enrollment increased marginally at both four- and two-year institutions. Among blacks, male enrollment increased less than 10 percent at four-year schools and actually declined at two-year institutions. Thus the large increase in the number of male minority undergraduates was due mostly to gains in the numbers of Hispanic and Asian students.

ENROLLMENT SHARES AT TWO-YEAR INSTITUTIONS

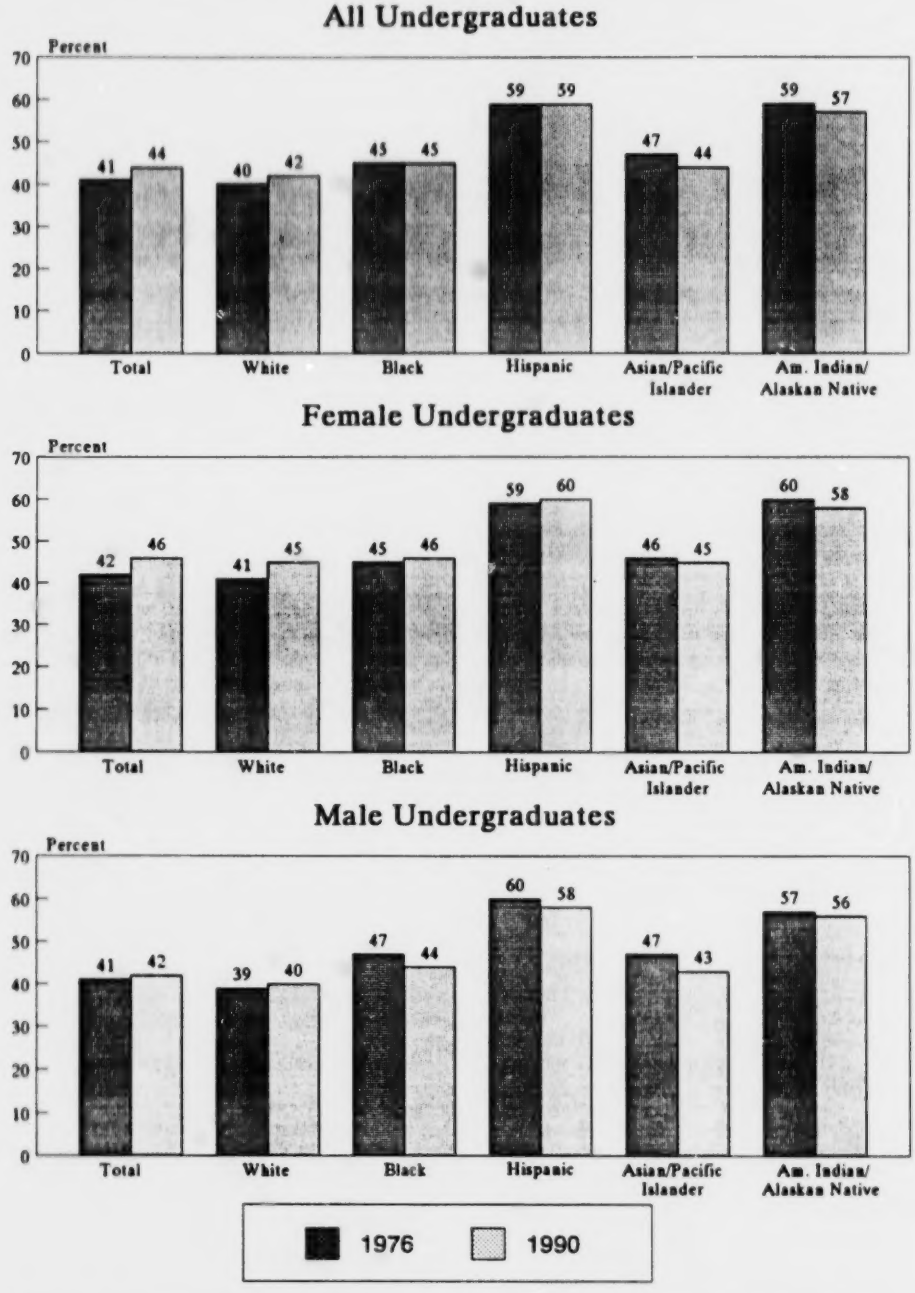
These enrollment trends suggest that, relative to white students, minority students are not being increasingly restricted in their choice between four-year schools and two-year ones. But one can also address this issue more directly.

Overall, the proportion of students attending two-year schools increased from 41 percent to 44 percent between fall 1976 and fall 1990. The increase was due mostly to whites, for whom the proportion enrolled at two-year schools increased from 40 percent to 42 percent. The proportions of black and Hispanic students attending two-year institutions were roughly stable (see Figure 6). Among Asians, a smaller proportion attended two-year schools in 1990 than in 1976.

Gender differences are also a factor in the slight rise in the share of students attending two-year institutions. While the proportion of men enrolled in two-year schools increased only slightly between 1976 and 1990, the proportion of women doing so grew from 42 percent to 46 percent; in fact, the proportion of women enrolled increased among all racial/ethnic groups save Asians and American Indians.

This analysis, then, finds only small changes in student choice between two- and four-year institutions between the late 1970s and 1990. While minority students remain more likely than whites to enroll in two-year institutions, during that period white students became more likely, and minority students less likely, to enroll in two-year schools. A significant increase occurred in the fraction of female students attending two-year schools; but it included both white and minority women, and it happened in the context of the significant overall increases in female enrollment noted above.

Figure 6.
Proportion of Undergraduate Enrollment in Two–Year Postsecondary Institutions, by Race/Ethnicity and Gender, Fall 1976 and Fall 1990



SOURCE: Congressional Budget Office tabulations based on unpublished data from the U.S. Department of Education, National Center for Education Statistics.

NOTE: See Appendix B, Table B–1 for data.

CHAPTER III

ENROLLING IN PRIVATE CAREER SCHOOLS

In recent years, interest in proprietary schools has increased along with anecdotal evidence of their increasing minority enrollment. Some observers have praised these schools as providers of a wide range of job skills now in demand in our society. Others, however, have questioned both the quality of the instruction offered at many of these institutions and the extent to which they help students find jobs.

Considerable uncertainty exists about trends in proprietary school enrollment and about its composition in terms of racial/ethnic and gender groups. The Department of Education, for example, has only recently begun to collect data regularly on the matter. This study uses data from the annual October Current Population Survey (CPS) to examine trends in private career school enrollment.

The CPS has been collecting data on enrollment in business, vocational, technical, and correspondence courses since 1973. To focus on students who are most likely to be in trade or occupational programs--rather than simply taking courses for personal enrichment or to supplement other training--this analysis does not count as enrolled those students who are also attending regular colleges or have already graduated.[1] This analysis includes people between the ages of 18 and 34 because a disproportionate share of students in proprietary schools are over 24. Enrollment is analyzed in 1976, 1980, 1989, and 1990 because survey items were similar in those years; they also span the period when enrollment in private career schools is thought by some observers to have grown the most. Finally, because the information presented here relates to enrollment in the fall of those years, it represents only part of the total enrollment at these schools during the entire year. Although this divergence is evident for all types of postsecondary schools, it may be especially significant for private career schools because they offer

1. Such persons are unlikely to be enrolled in trade or occupational programs at private career schools, either because they already have a collegiate degree or because enrollment in private career schools generally requires a full-time commitment. As private career schools note as a selling point, their students attend on a more intensive, 40-hour-a-week basis, allowing them to complete their programs more quickly than in regular postsecondary institutions. Although data on full-time or part-time enrollment status while taking such courses would be helpful in estimating total enrollment in trade or vocational programs, such data are not available.

more and shorter courses over the year. Trends in enrollment in these schools, however, should be only slightly affected by this feature of the data.

Several patterns are evident in private career school enrollment. First and somewhat surprising, fall attendance has been roughly stable at just over 1 million students since 1976, as shown in Figure 7 (also see Appendix Table B-4).[2] This finding does not support the contention of some analysts that proprietary school enrollment must have risen because of the large increase in the share of federal student aid--both grants and loans--going to students at those schools. For example, students at private career schools got about 14 percent of Pell Grant funds in academic year 1981-82; the share peaked at 27 percent in 1987-88 before dropping to 23 percent in 1989-90. Similarly, proprietary school students received about 6 percent of Stafford Loans (then called Guaranteed Student Loans) in fiscal year 1981; the share increased to 35 percent in 1987 before dropping to 27 percent in 1989.

Second, the minority proportion of the enrollment in private career schools is increasing, rising from 14 percent to 25 percent between fall 1976 and fall 1990, for example. Although these figures must be viewed cautiously because the sample sizes from the CPS are small, the trend is consistent with the increases in minority enrollment also found in nonprofit four-year and two-year institutions.[3]

Third, unlike at other types of institutions, the female proportion of private career enrollment since 1976 has remained relatively constant at just under 50 percent.

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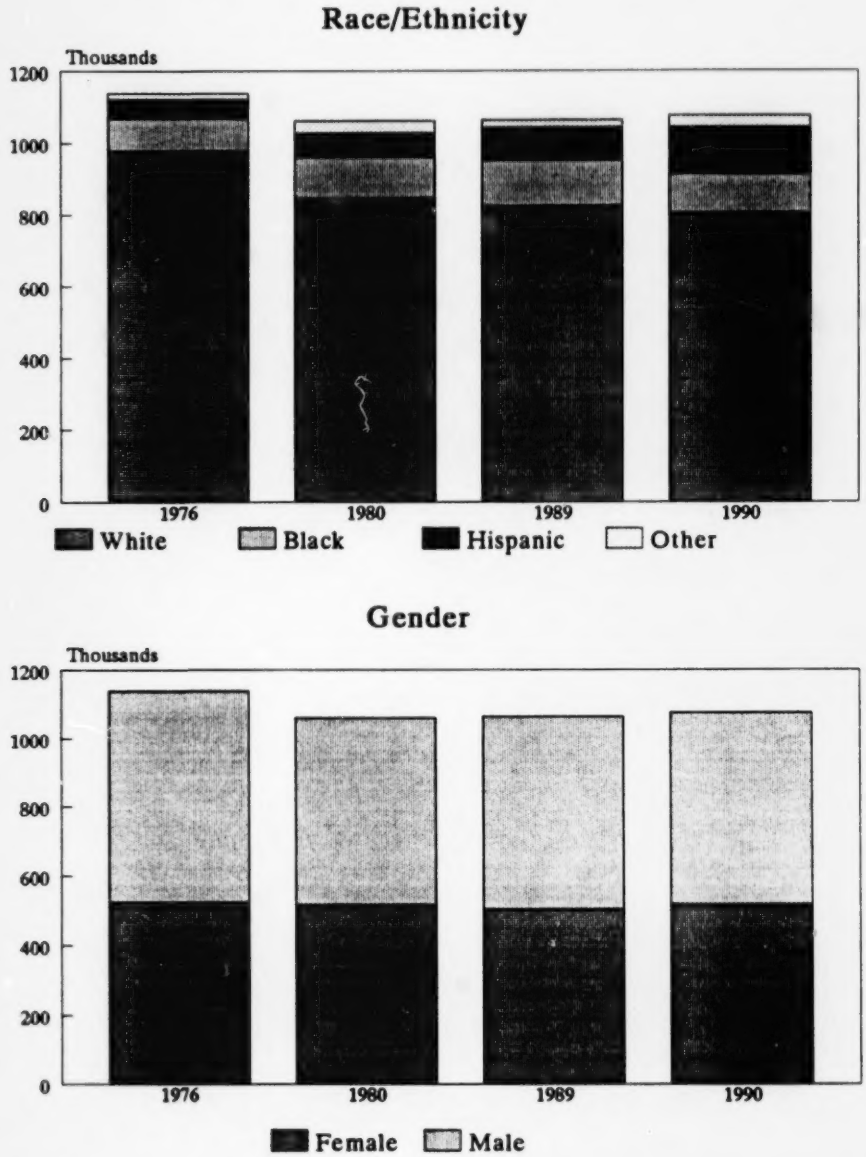
2. Alternative estimates of proprietary school enrollment include those of John B. Lee, who has estimated enrollment in regular programs at 1.4 million in 1987 and in home study--or correspondence courses--at approximately 1.5 million. In contrast, the Department of Education estimated proprietary school enrollment in fall 1986 at about 600,000, and CBO's tabulation of data from the new 1990 National Postsecondary Student Aid Study places enrollment for the entire 1989-90 academic year at about 1.4 million, a figure that includes home study or correspondence course enrollment at institutions that also offer regular programs. See John B. Lee and Jamie P. Merisotis, *Proprietary Schools*, ASHE-ERIC Education Report 5, 1990; Department of Education, National Center for Education Statistics, *Undergraduate Financing of Postsecondary Education: A Report of the 1987 National Postsecondary Student Aid Study*, 1988; and Congressional Budget Office tabulations of data from the Department of Education, National Center for Education Statistics, National Postsecondary Student Aid Study: 1989-90.

3. The two trends cannot be directly compared, however, because of the differences in the procedures used to collect the data. The Integrated Postsecondary Education Data System is an institutional survey, and the Current Population Survey is a household survey.

Figure 7.
Enrollment in Proprietary Institutions Among Persons Aged 18 to 34, by Race/Ethnicity and Gender, October 1976, 1980, 1989, and 1990



SOURCE: Congressional Budget Office tabulations of data from the October Current Population Survey for the years 1976, 1980, 1989, and 1990. Tabulation reflects positive responses to the question, "Is...taking any business, vocational, technical or correspondence courses other than on the job training?"; but those who have graduated from college or who are currently enrolled in college have been excluded.

NOTE: See text for a description of the data and method used in this calculation. See Appendix B, Table B-4 for a listing of the data used in this figure.

Taken together, these findings corroborate reports that the share of minority enrollment in private career schools is increasing. The findings do not, however, support the contention that total enrollment in these schools must have increased because the share of federal aid going to their students has grown. Rather, the trends presented here indicate that proprietary school enrollment has been stable for the last 15 years or so, although increasingly composed of minorities. This pattern suggests that private career schools have maintained their enrollment--and according to some, been able to raise their tuition and maximize their profits--by using federal aid to support their students and by more aggressively recruiting disadvantaged students, who include a high proportion of minorities.

The evidence reviewed in this chapter, therefore, supports the contention that more minority students have been choosing to enroll in proprietary schools. Questions remain about the quality of the training received, but they lie beyond the scope of this analysis. Among students who have received Stafford student loans, those who attended proprietary schools have been found to default at significantly higher rates than those who attended other types of institutions--even after taking into account a wide range of personal and family characteristics of the borrowers.[4] This finding, among others, suggests a continuing need for research on the effectiveness of proprietary schools in improving their students' economic prospects.

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4. For more details, see Congressional Budget Office, *The Experience of the Stafford Loan Program and Options for Change* (December 1991).

CHAPTER IV

ENTERING AND PERSISTING IN COLLEGE

Many evaluations of equal educational opportunity have been conducted by examining postsecondary enrollment. The goal of access, for example, has been assessed in terms of the numbers or proportions of different types of students enrolled in postsecondary institutions (see Chapter I for a review of white and minority enrollment trends). The goal of choice has been examined, as in Chapters I and II, in terms of the numbers or proportions enrolled in various kinds of schools.

A shortcoming of many of these evaluations is that they ignore the aforementioned third goal of equal educational opportunity: persistence in postsecondary education. Although it can be interpreted as meaning that access should be available to students over a period of years, separate emphasis on persistence reinforces the idea that college entrance does not end concern about equal opportunity. In the case of minorities, it is especially important to distinguish access (and choice) from persistence. Some analysts have suggested that minority enrollment falls below that of whites not because minorities don't enter postsecondary institutions, but because they don't persist; that is, they drop out.

One way to examine access and persistence together is to divide enrollment into its two components, entrants and persisters. All postsecondary students can be classified in these two categories. Entrants are those who were not enrolled last year but are enrolled this year; persisters are those who were enrolled last year as well as this year. (See Appendix C for a more detailed breakdown of postsecondary enrollment.)

This division is not new to people concerned with managing college enrollment, who frequently refer to their policies to "recruit and retain" students. It does, however, suggest a new way to analyze enrollment with respect to equal educational opportunity. In particular, splitting enrollment into entrants and persisters permits analyzing minority postsecondary participation in a more precise way. It permits a more accurate description of differences in enrollment between whites and minorities--in entering (access and choice) or in persisting--and it can facilitate the development of policies to address those differences.

Federal postsecondary education policy appears to some analysts to be more concerned with getting students into college--access and choice--than with persistence. Although the continued availability of student aid over the course of a postsecondary education is obviously important in promoting it, research suggests that persistence is affected less by student aid than by such institutional factors as the quality and quantity of individual contact a student has with other students and with faculty.[1] Institutionally based policies--including those that are federally funded--may as a result be more effective in addressing the issue of persistence. (A strategy along those lines is discussed in Chapter VI.)

DEFINITIONS OF ENTRY AND PERSISTENCE RATES

Calculating entry and persistence rates requires classifying people into whether or not they are enrolled in college in the current year as well as in the previous year. Entrants are those students who did not attend college the previous year but are enrolled in the current one (see Figure 8). They include first-time enrollers as well as students who have attended college before. This second group includes "stopouts," those who leave and then return to school; those who have not completed a program; and those who have completed one below the baccalaureate level and are returning to school to enter another one. Thus the entry (and reentry) rate is the proportion of the population not enrolled in college last year but enrolled this year. Persisters are those who attended college the previous year and continue to do so in the current year. The persistence rate is the proportion of those attending college last year who are also enrolled this year.

Undergraduate entry and persistence must be examined using data from the Current Population Survey, instead of from institutional surveys, because the entire population must be classified into the different enrollment categories to calculate the different rates. As was done in Chapter I, this analysis emphasizes the population 18 to 24 years of age, using college enrollment figures that include those going both full time and part time.[2]

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1. For example, see Vincent Tinto, *Leaving College* (Chicago: University of Chicago Press, 1987).

2. In October 1990, students who were enrolled full time were somewhat more likely than those enrolled part time to have also been enrolled a year earlier. About 67 percent of the full timers in 1990 were also enrolled in 1989, compared to 56 percent of the part timers.

FIGURE 8. BASIC CATEGORIES OF UNDERGRADUATE ENROLLMENT

		Is the Person Enrolled in the Current Year?		
		Yes	No	Total
Was the Person Enrolled in the Previous Year?	Yes	Persister	Dropout or Graduate	Enrolled Last Year
	No	Entrant	(Other)	Not Enrolled Last Year
		Enrolled Current Year	Not Enrolled Current Year	Total

While current-year college enrollment status has been available in the CPS for more than 25 years, information on previous-year status has been collected by the Bureau of the Census only since 1988. In order to analyze entry and persistence trends before that year, it was necessary to gauge a person's college enrollment status in the previous year on the basis of other available information, such as the year of high school graduation and current year of college enrollment (see Appendix C for the procedures used). Gauging previous college enrollment status also required calculating entry and persistence rates relative to the number of high school graduates, not the entire population of 18- to 24-year olds.

Entry and persistence rates were calculated for the years 1972, 1976, 1980, 1984, 1989, and 1990. Because the Bureau of the Census in 1988 changed the questionnaire used to collect information on enrollment, findings for the last years included in this analysis may not be strictly comparable with earlier years. To confirm that trends found between 1984 and 1990 were not due to changes in the questionnaire in 1988, preliminary tabulations were made using 1986 and 1987 CPS data. These tabulations support the findings reported in the analysis.

UNDERGRADUATE ENTRY RATES

This section presents two analyses. The first examines two entry rates among 18- to 24-year olds who were not in college the previous year. One rate (the two-year rate) is for entry into the first two college years and includes both entrance into the freshman year and reentrance into the sophomore year. The other rate (the four-year rate) covers entry into all four undergraduate years and captures the additional reentrance by stopouts who are returning for their junior or senior year.[3]

The second analysis is based on college entry by "recent high school graduates" and is used to examine their choice between two-year and four-year schools. More precisely, it is based on the college enrollment rate in October of individuals aged 16 to 24 who graduated from high school during the preceding 12 months.[4] Recent high school graduates probably have the highest college entry rate. In contrast to the population used in the first analysis, this group does not include those who may have previously attended college and then stopped out for a year or more.

Two-Year and Four-Year Undergraduate Entry Rates

Access to college among 18- to 24-year olds varies by racial/ethnic group, with non-Hispanic whites having the highest entry rates into the first two years in 1990, followed by non-Hispanic blacks and Hispanics.[5] In particular, white men and women had the highest entry rates in 1990, with 22 percent of them entering (or reentering) college in that year (see Figure 9).[6]

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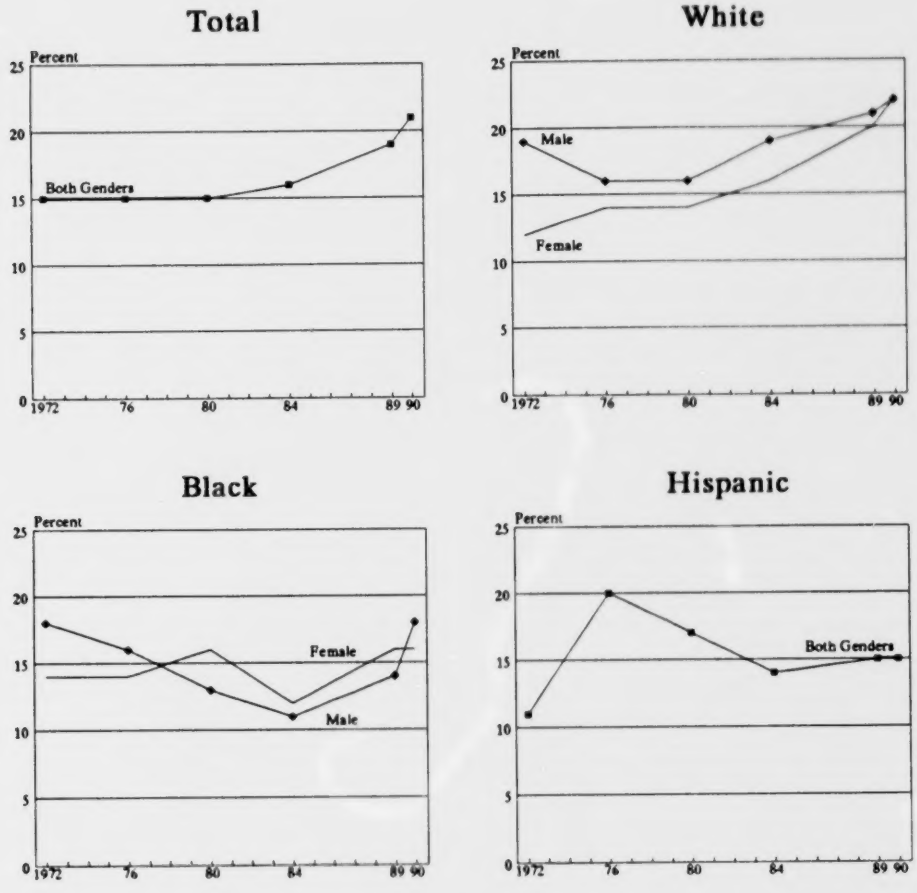
3. In calculating the entry and persistence rates covering the first two undergraduate years, only those who had not completed two or more years of college were included. Similarly, in calculating the rates covering all four undergraduate years, only those who had not completed four or more years of college were included.

4. This approach is used by the Bureau of Labor Statistics, which tabulated the data presented.

5. Asians, American Indians, and female and male Hispanics are not reported separately because their sample sizes in the Current Population Survey are too small.

6. For an analysis of college entry that statistically controls for social background characteristics (including family income, parental education, and family size), see Robert M. Hauser, "What Happens to Youth After High School?" *Focus*, vol. 12, no. 3 (Fall/Winter 1991), pp. 1-13.

Figure 9.
College Entry Rates into First Two Years of College Among 18– to 24–Year Olds, by Race/Ethnicity and Gender, Selected Years from October 1972 to October 1990



SOURCE: Congressional Budget Office tabulations of data from the 1972, 1976, 1980, 1984, 1989, and 1990 October Current Population Surveys. See text for definitions and technical details of the calculations.

NOTE: See Appendix B, Table B–5 for data.

Significant changes in access as measured by two-year entry rates have occurred since 1972. Although young white men also had the highest entry rate in 1972, young black men were second. Since then, the entry rate of young black men has declined, falling to a low point in 1984, and then increased, returning in 1990 to where it was in 1972. In contrast, the white female rate has steadily increased, while the black female rate has fluctuated around a relatively stable trend. The Hispanic rate has also fluctuated and may have increased slightly since 1972.[7]

The four-year entry rate, which measures access in terms of entry (or reentry) into all four undergraduate college years, shows results virtually identical to the two-year rate (see Figure 10). Because it allows for reentry into the last two or three years of college, the four-year rate can exceed the two-year rate.

Several points based on these findings deserve emphasis. Overall, access to college measured by entry rates among 18- to 24-year olds was relatively stable between 1972 and 1980, and it reached its highest level in 1990. However, differences in trends among groups defined by race/ethnicity and gender occurred during this 12-year period. Most significantly, the entry into college of young white women increased, while the entry of young black men first declined and then increased, settling at about its initial level.

College Entry Rates of Recent High School Graduates

Traditionally, those attending college were expected to enter during the fall following high school graduation, and to persist until they graduated with a bachelor's degree four years later. This path probably was never as typical as popular mythology would have it, and it certainly does not characterize the college careers of most recent recipients of baccalaureate degrees. Nevertheless, a large fraction of youths between the ages of 16 and 24 do choose to go on to college the fall after their high school graduation. Because these new undergraduates make up a large proportion of the enrollments that underlie the entry rates just examined, they deserve a separate investigation--including the type of institution they choose to attend.

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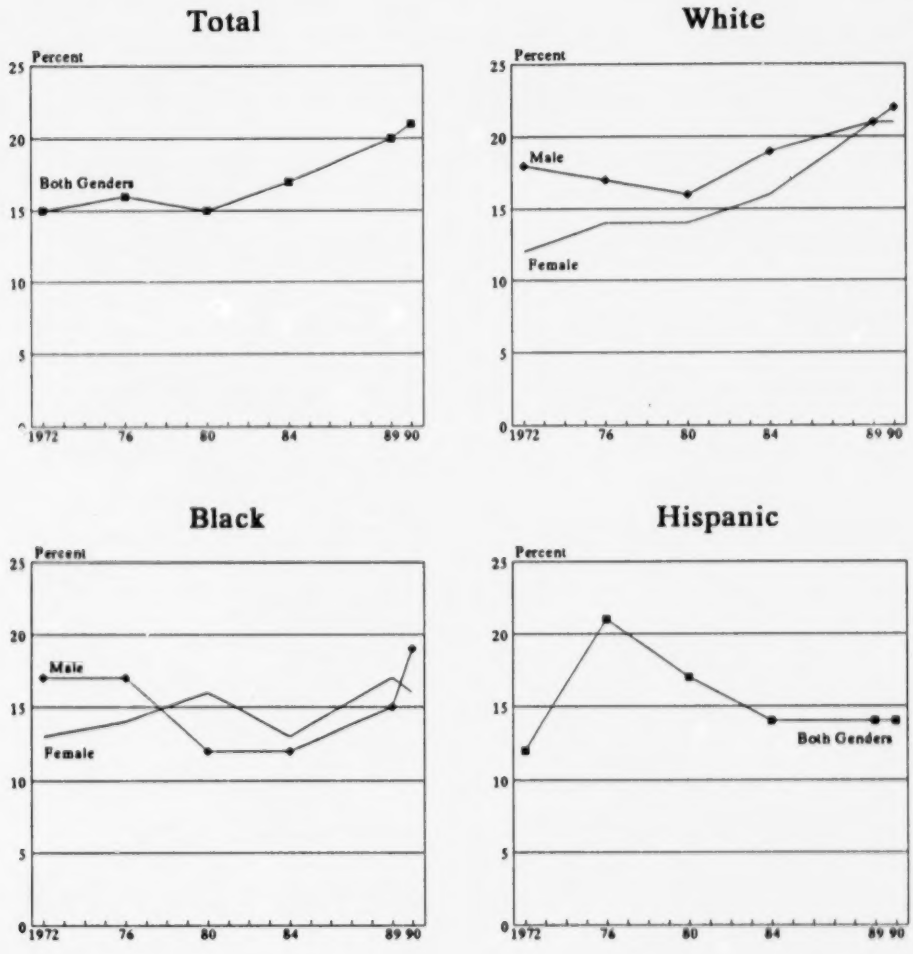
7. In interpreting these numbers, the continuing Hispanic immigration should be kept in mind. Recent immigrants do not have the same educational opportunities to prepare for college as those who are native-born, but the immigrants increase the base used to calculate the relevant percentages.

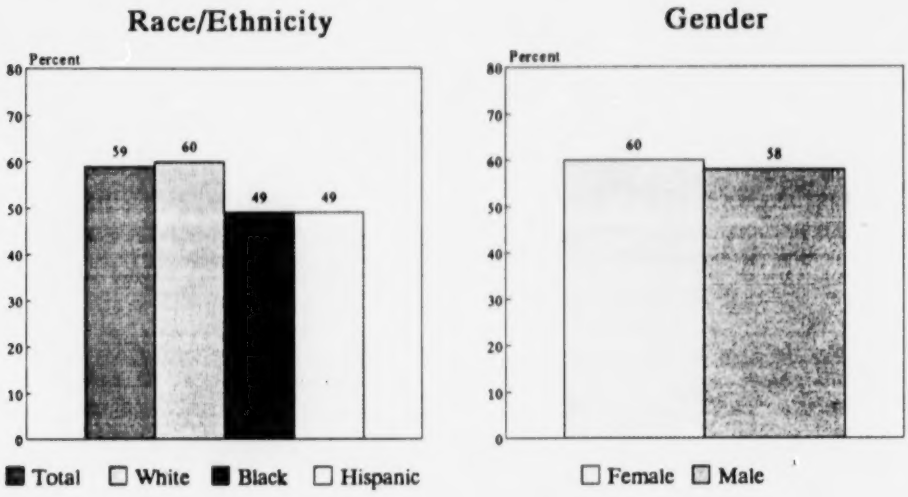
Figure 10.
College Entry Rates into First Four Years of College Among 18– to 24–Year Olds, by Race/Ethnicity and Gender, Selected Years from October 1972 to October 1990



SOURCE: Congressional Budget Office tabulations of data from the 1972, 1976, 1980, 1984, 1989, and 1990 October Current Population Surveys. See text for definitions and technical details of the calculations.

NOTE: See Appendix B, Table B–5 for data.

Figure 11.
Proportion of Recent High School Graduates Enrolled in College, by Race/Ethnicity and Gender, Average for October 1987, 1988, 1989, and 1990



SOURCE: Congressional Budget Office tabulations based on unpublished data from the Bureau of Labor Statistics, derived from the 1987, 1988, 1989, and 1990 October Current Population Surveys.

NOTES: Figures are based on recent high school graduates aged 16- to 24- years old.
See Appendix B, Table B-6 for data.

During the 1987-1990 period, nearly 60 percent of high school graduates enrolled the next fall in either two-year or four-year institutions (see Figure 11 and Appendix Table B-6).[8] That rate greatly exceeded the one for all 18- to 24-year olds. It also showed that whites are more likely than Hispanics or blacks to enroll in college right after high school. Entry rates of men and women were similar over the period, although rates for women appeared to be increasing--and may now be slightly higher than those for men.

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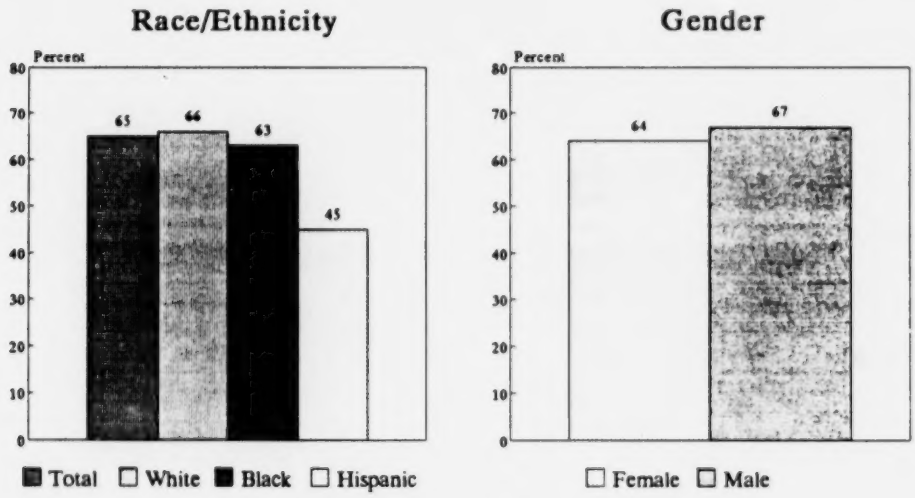
8 The data come from the CPS, as tabulated by the Bureau of Labor Statistics (BLS). The BLS has tabulated data on entry into two-year or four-year schools only since 1986.

Two out of three recent high school graduates enrolling in college chose four-year schools (see Figure 12). This result is somewhat more than the overall share of students attending four-year schools reported in Chapter III, indicating that two-year institutions are more likely to be chosen by those who are not recent high school graduates. Among the recent graduates, whites were slightly more likely to choose four-year institutions than blacks, and both were more likely to do so than Hispanics. Men were only slightly more likely than women to choose four-year institutions.

Figure 12.
Proportion of Recent High School Graduates Enrolled in College Who Chose Four-Year Institutions, by Race/Ethnicity and Gender, Average for October 1987, 1988, 1989, and 1990



SOURCE: Congressional Budget Office tabulations based on unpublished data from the Bureau of Labor Statistics, derived from the 1987, 1988, 1989, and 1990 October Current Population Surveys.

NOTES: Figures are based on recent high school graduates, aged 16- to 24-years old, enrolled in the fall following graduation.

See Appendix B, Table B-7 for data.

Overall Findings on Entry Rates

Access to college appears to have increased since 1972, and college entry rates reached their highest level to date in 1990. Rates for young white women increased the most; college entry first declined and then increased among young black men. Overall, entry rates remain highest for whites, followed by blacks, then Hispanics. Among recent high school graduates going on to college the fall after graduation, whites and blacks, but not Hispanics, choose four-year institutions almost twice as often as two-year schools.

UNDERGRADUATE PERSISTENCE RATES

Access to--and choice of--a college is only the first step toward acquiring a college degree. After entering, students must persist. To assess the persistence of undergraduates, this study employs two measures. The two-year persistence rate covers the transition between the first and second undergraduate years, measuring the proportion of those enrolled as freshmen in the previous year who are enrolled as sophomores in the current year. The four-year rate spans the transitions across the four undergraduate years, measuring the proportion of those who were enrolled during the previous year in college (and did not complete a bachelor's degree) who are also enrolled during the current year.

Two measures are used because the transition experiences differ across the undergraduate years. Many students use the first year of postsecondary education as a period of experimentation to see if they like college. Calculating the different rates permits a comparison of persistence into the second year with persistence throughout the undergraduate years.

Two-Year and Four-Year Undergraduate Persistence Rates

Between 1980 and 1990, two-year persistence rates among 18- to 24-year olds increased for all groups and stood at or near their highest level at the end of the period (see Figure 13).[9] Blacks increased their rate the most, although it remained below that of Hispanics and whites at the end of the period.

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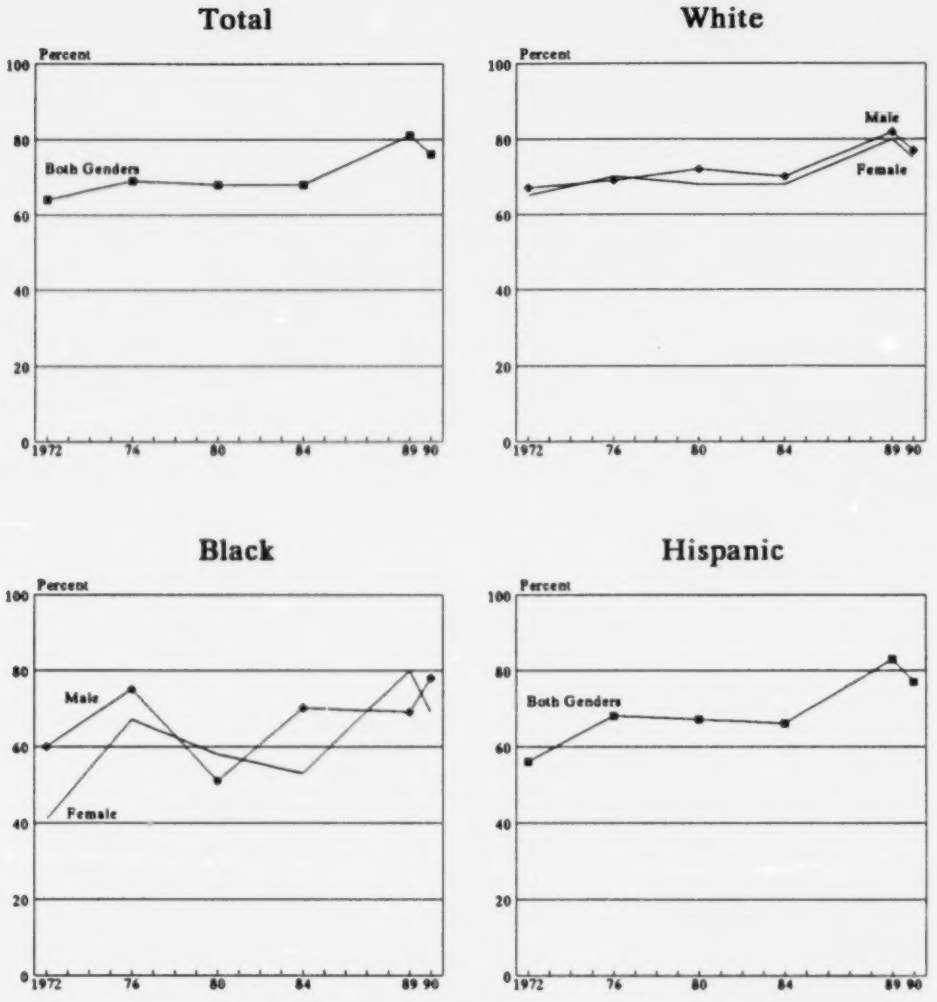
9. Readers should bear in mind that because of small sample sizes, rates for minorities are subject to relatively greater sampling error than are rates for whites.

Figure 13.
Undergraduate Two–Year Persistence Rates Among 18– to 24–Year Olds, by Race/Ethnicity and Gender, Selected Years from October 1972 to October 1990



SOURCE: Congressional Budget Office tabulations of data from the 1972, 1976, 1980, 1984, 1989, and 1990 October Current Population Surveys. See text for technical details of the calculations.

NOTE: See Appendix B, Table B–8 for data.

The four-year college persistence rate exceeds the two-year rate for all groups examined (see Figure 14 on page 34). In 1990, that rate was similar for all groups at about 80 percent. The four-year rate appears also to have been relatively stable between 1972 and 1980 for all groups save blacks. Between 1980 and 1990, all groups--especially minorities--appear to have increased their four-year rate. These findings, however, are based on averages. Persistence rates may have decreased at individual schools.

Implied Graduation Rates

Besides revealing the different proportions of students who continue from one year of college to the next, persistence rates can also be used to approximate graduation rates for the bachelor's degree. Because these rates are based on all students, many of whom are not seeking a bachelor's degree, they should not be taken as a success rate among those seeking a bachelor's degree. They are rather a broad indicator of the proportion of students who may be interpreted as persisting over four years and thereby earning a bachelor's degree.[10] Since students are increasingly taking longer than four years to gain the degrees, however, the implied graduation rates presented here could be higher than the actual ones.[11]

The graduation rate estimated in this study takes into account the three transitions across the four undergraduate years as well as the probability of completing the degree after becoming a senior (since the persistence rate is measured from October of one year to October of the next year). The probability of graduating once one becomes a senior is assumed to be 95 percent.[12] Assuming that it takes four years to complete a bachelor's degree,

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10. In using CPS data, it is conventional to consider those who have completed four years of college as earners of a bachelor's degree. In fact, more students appear to be taking longer than four years to earn such a degree, even when they maintain full-time status. On average, it might be more accurate to assume five years for completion of a bachelor's degree, especially since many students are only enrolled part time. But in order to provide a broad gauge of graduation rates, this analysis assumes the four-year period.

11. The proportion of students enrolled part time differs little by race, however, so comparisons of implied graduation rates between blacks and whites should not be much affected by this factor.

12. The graduation rate is estimated by a two-step process. The first step involves assuming identical "upper-level" transition rates--namely, those from sophomore to junior years and from junior to senior years. (In fact, the transition rate from sophomore to junior year can be expected to be lower because persons seeking associate degrees will leave college at the end of two years.) Second, the upper-level transition rates are calculated by setting the four-year transition rate equal to the sum of the two-year rate plus twice the (unknown) upper-level rate and then dividing that sum by three. For 1990, this means that the four-year persistence rate, 81 percent, is first set equal to one-third of the sum of 76 percent plus twice the upper level rate. That rate

the percentage of entering students estimated to graduate with one in that period ranges from a high of 53 percent for white men to a low of 45 percent for black women. The overall estimate for 1990 is that 51 percent of entering freshmen will graduate.

COMPARING ENTRY AND PERSISTENCE RATES

By distinguishing between entry rates and persistence rates, this analysis has been able to relate different aspects of postsecondary enrollment to the goals commonly associated with the policy of equal educational opportunity. Several results of the analysis are worth emphasizing.

First, the increasing entry rates among young white women indicate that they have markedly improved their access to postsecondary institutions since 1972. As recent high school graduates, they are now choosing four-year institutions at a rate similar to young white men. Their persistence rates also run close to those of white men. Although these findings involve only women 24 years old or younger, they help to explain the gains in female enrollment reported in Chapters I and II.

Second, this analysis found that entry rates among young black men dropped between 1972 and 1984 and then returned to their 1972 level. The persistence rate of young black men, in contrast, appears to have increased throughout the 1972-1990 period. Although restricted to those 24 or younger, these results illuminate the findings on trends in enrollment counts among all black men, namely, their decline from the mid-1970s to the mid-1980s, when they stabilized before increasing to their 1990 level. These findings also suggest that getting young black men to try college may be relatively more of a problem than getting them to persist. Similar findings apply to black women. Continued efforts appear to be needed to increase the entry and persistence rates of young blacks to the level of young whites.

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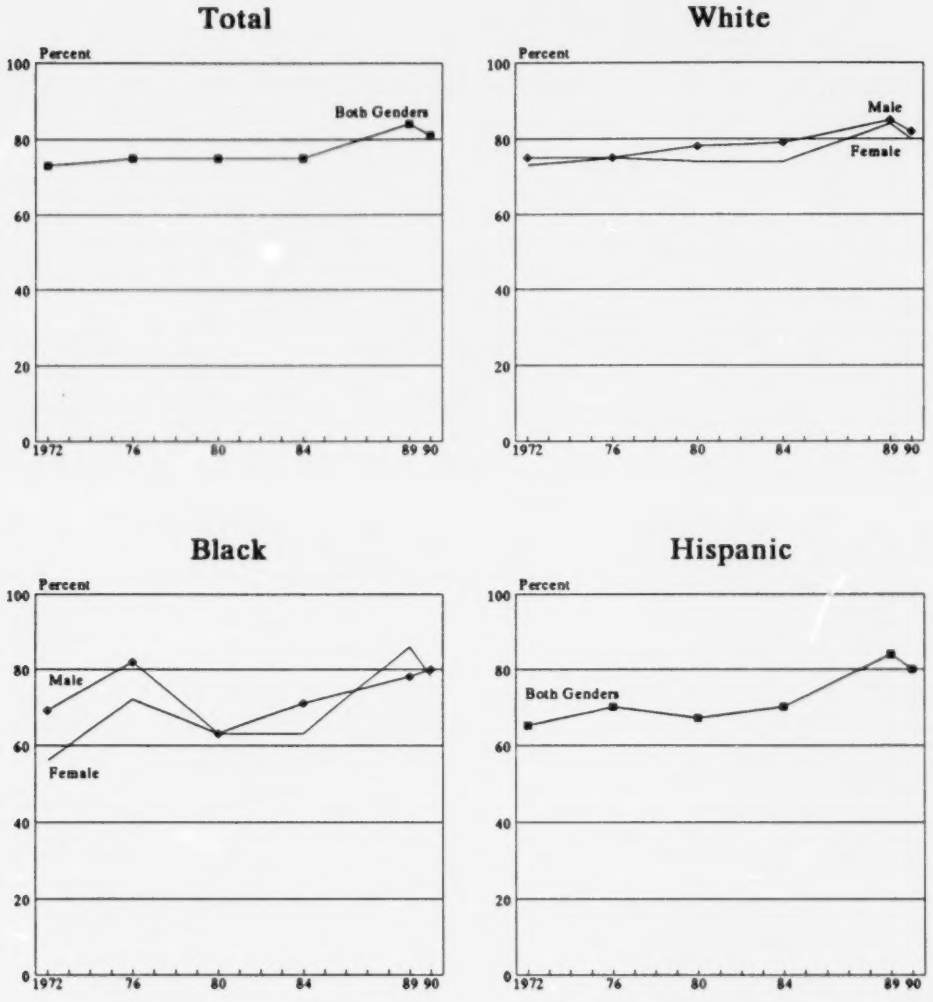
is solved for and determined to be 84 percent. The graduation rate is then estimated by multiplying the four transition rates, including the 95 percent of seniors in the fall who are assumed to graduate. The estimated graduation rate for 1990 is .76 x .84 x .84 x .95 = .51. Thus 51 percent are expected to graduate.

Figure 14.
Undergraduate Four-Year Persistence Rates Among 18- to 24-Year Olds, by Race/Ethnicity and Gender, Selected Years from October 1972 to October 1990



SOURCE: Congressional Budget Office tabulations of data from the 1972, 1976, 1980, 1984, 1989, and 1990 October Current Population Surveys. See text for definitions and technical details of the calculations.

NOTE: See Appendix B, Table B-8 for data.

CHAPTER V

COMPLETING COLLEGE

Another way to view differences between whites and minorities with respect to postsecondary education is in terms of college attainment, that is, years of college completed or degrees earned. These measures differ from enrollment in that providing equal opportunity (to enroll) differs in principle from ensuring equal educational outcomes (graduation). Although attainment is an outcome measure, examining how whites and minorities compare in their accomplishments at certain endpoints in the education process can still be informative. This analysis compares whites and minorities in terms of completing at least two or four years of college and earning associate or bachelor's degrees.

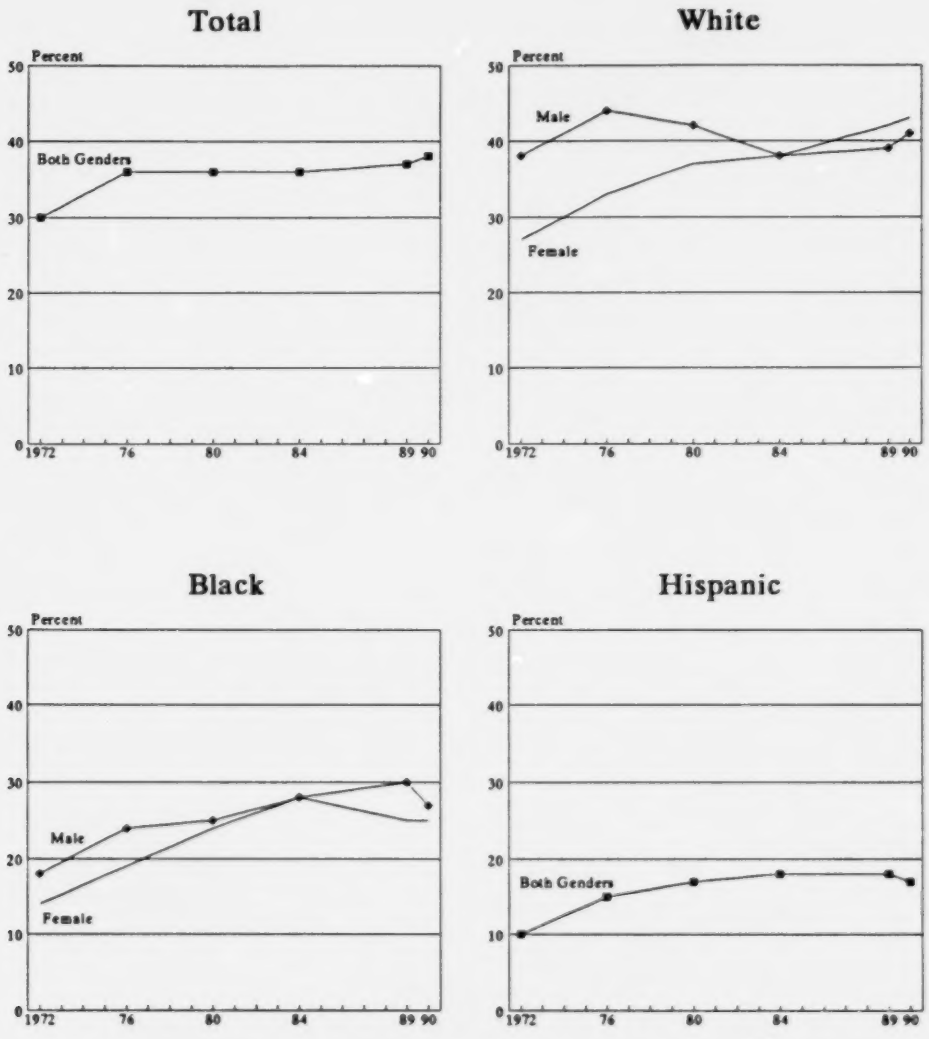
YEARS OF COLLEGE COMPLETED

Even allowing for the fact that larger proportions of today's students take more than four years to complete a bachelor's degree, most people who will complete college probably have done so by the time they reach their late 20s. Thus data on the years of college completed are presented here for persons aged 25 to 29.

Reflecting their high entrance and persistence rates, white women and men are most likely to have completed two or more years of college (see Figure 15). Blacks are significantly less likely, and Hispanics least likely, to have completed that amount, but the fact that relatively more Hispanics are not native-born should be kept in mind.

Although the proportion of persons completing at least four years is lower than the proportion completing at least two, it increased between 1972 and 1990 for all groups except white men, thereby reducing disparities among the groups (see Figure 16). The largest absolute increases were realized by white women. By 1990, their level was equal to that of white men, the highest among the various groups.

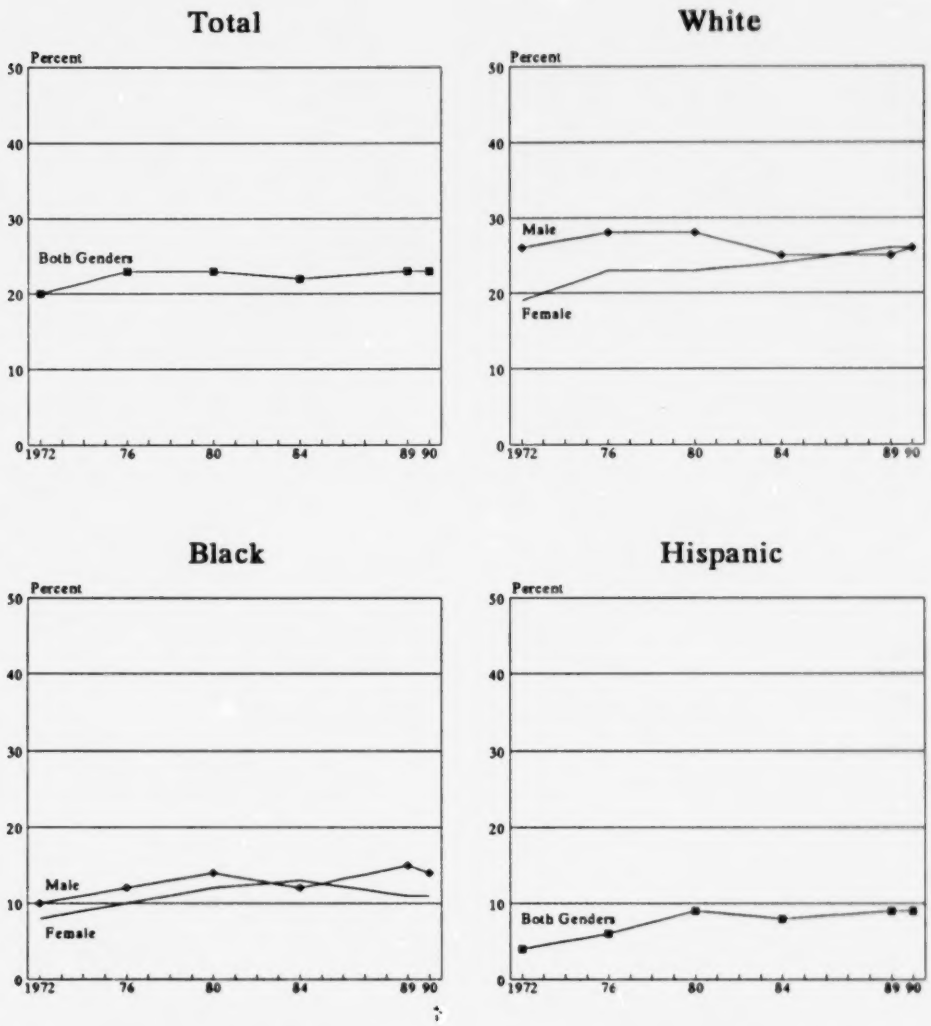
Figure 15.
Proportion of 25– to 29–Year Olds Who Have Completed Two or More Years of College, by Race/Ethnicity and Gender, Selected Years from October 1972 to October 1990



SOURCE: Congressional Budget Office tabulations of data from the 1972, 1976, 1980, 1984, 1989, and 1990 October Current Population Surveys. See text for definitions and technical details of the calculations.

NOTE: See Appendix B, Table B–9 for data.

Figure 16.
Proportion of 25– to 29–Year Olds Who Have Completed Four or More Years of College, by Race/Ethnicity and Gender, Selected Years from October 1972 to October 1990



SOURCE: Congressional Budget Office tabulations of data from the 1972, 1976, 1980, 1984, 1989, and 1990 October Current Population Surveys. See text for definitions and technical details of the calculations.

NOTE: See Appendix B, Table B–9 for data.

Black men also reported increases in the proportions completing at least four years of college, rising from 10 percent in 1972 to 14 percent by 1990. This finding appears to be inconsistent with the finding reported earlier of declining college entry by black men through the mid-1980s, but the cause of the inconsistency is not clear.[1] Black females increased their proportion completing at least four years of college, too, but not as much as black males.[2]

ASSOCIATE AND BACHELOR'S DEGREES EARNED

The increase indicated above in the years of college completed by white women is confirmed by data from schools on the number of degrees they awarded (see Figure 17). White women now earn more associate and bachelor's degrees each year than do white men. They earned 47 percent of the former and 45 percent of the latter in 1988-89. By comparison, white men in that year earned 35 percent and 40 percent, respectively. Among white females, the number of both associate and bachelor's degrees earned increased between 1976-77 and 1988-89, while among white men both numbers declined.

Although the total number of these degrees earned by whites of all ages increased, their share of total degrees earned declined. This result occurred because the number of degrees earned by minorities increased even more over the 1976-77 to 1988-89 period than did the number of degrees awarded to whites.

Not all minority groups experienced increases, however. The number of degrees earned by blacks was relatively stable. Black men did see declines in the number of both associate and bachelor's degrees earned--even though data from household surveys indicated that more of them completed at least

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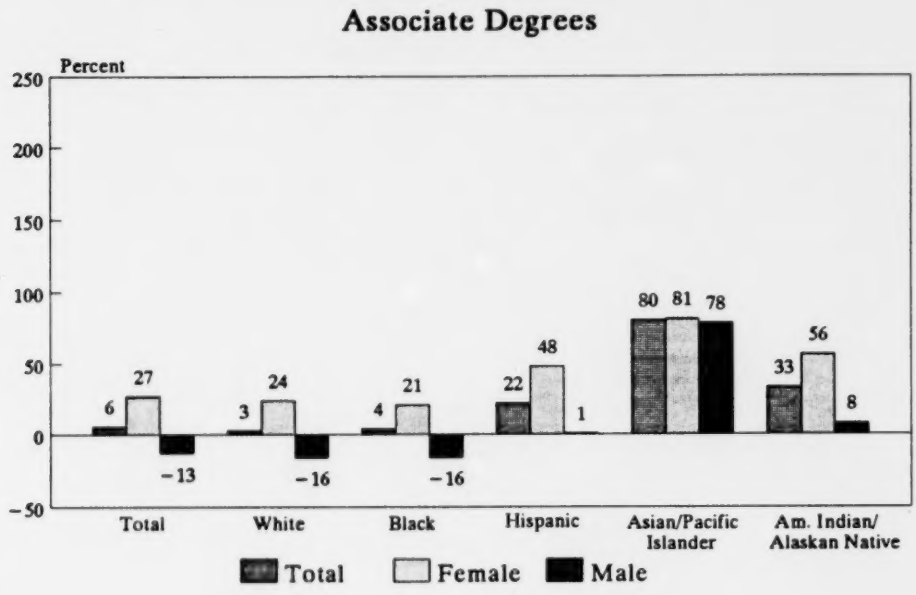
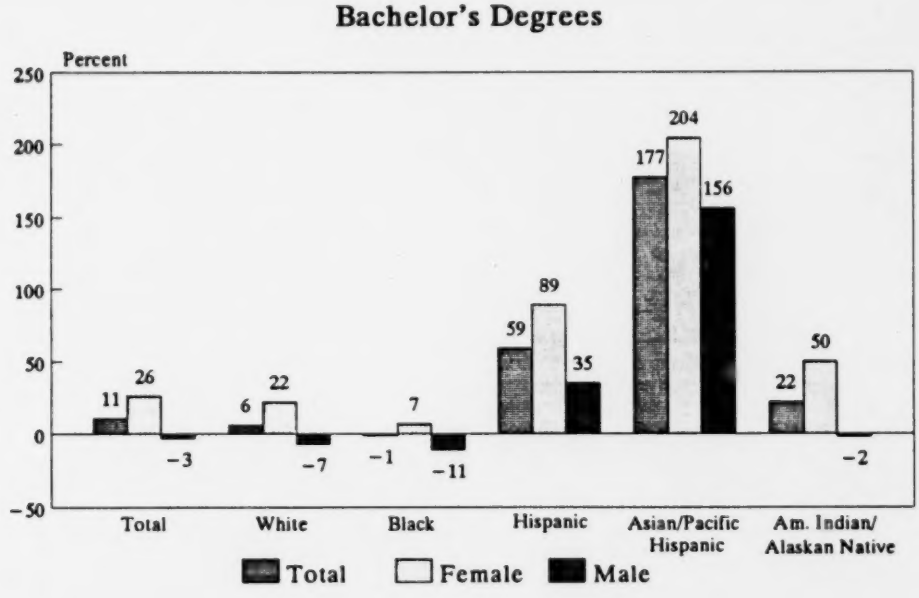
1. There also appears to be an inconsistency between the findings of an increasing trend in persistence rates and the finding that those who complete four or more years of college constitute a declining share of those who complete two or more years of college. This inconsistency may be due to the use of different cohorts (age groups); to differences in persistence between the second and third year (which is not examined) compared to persistence across the college years; to the increasing number of part-time students; to inaccurate reporting; or to a combination of these factors.

2. The increase in the proportion of black men completing at least two or four years of college also does not correspond to the findings below on trends in the number of degrees they have actually earned. This suggests that black men are completing more years of college but not converting their credits into degrees, that answers by respondents are inaccurate, or some combination of the two.

Figure 17.
Percent Change in the Number of Associate and Bachelor's Degrees Awarded, by Race/Ethnicity and Gender, 1976–77 to 1988–89





SOURCE: Congressional Budget Office tabulations based on unpublished data from the U.S. Department of Education, National Center for Education Statistics.

NOTE: See Appendix B, Table B–10 for data.

two or at least four years of college. Black women had increases in both types of degrees, and in contrast to the study's finding that a higher proportion of their 25- to 29-year-old male counterparts have completed at least two or four years of college, the women earned more of both associate and bachelor's degrees than black men. The stability in the number of degrees earned by blacks, coupled with the increase in the number of degrees earned by other minorities and white women, has produced a slight decline in the share of degrees earned by blacks.

Both female and male Hispanics earned more associate and bachelor's degrees between 1976-77 and 1988-89. Greater increases, however, were made by Hispanic women. By 1988-89, the shares of both types of degrees earned by all Hispanics increased.

Among Asians, the number of both types of degrees earned, especially bachelor's degrees, rose substantially. Both men and women made the gains, but men continued to earn (slightly) more degrees than women. Among American Indian/Alaskan Natives, the number of degrees earned also increased, and by 1988-89 women were earning more degrees than were men.

GENERAL FINDINGS ON COLLEGE ATTAINMENT

Several findings about college attainment among racial/ethnic and gender groups deserve emphasis. First, minorities have made gains in college attainment, measured either as the proportion completing at least two or four years of college or as number of degrees earned. All groups increased their proportions completing at least two or four years of college. Asians and Hispanics also had large gains in the annual number of degrees earned between 1977 and 1989, but blacks earned no more undergraduate degrees at the end of the period than they had at the beginning. Second, women have made remarkable increases compared with men. White women are becoming the most highly educated group at the undergraduate level in the country. But minority women have also made very significant gains, and in all groups except Asians, they now earn more degrees than the men. Only two groups declined in both the number of associate and of bachelor's degrees they earned between 1976-77 and 1988-89: white males and black males. Taken together, these findings suggest that minorities--other than black men--have made real progress in college attainment.

A comparison of changes in enrollment with changes in the number of degrees awarded over the period from 1976-77 to 1988-89 provides additional insight into the differences between whites and minorities in their postsecondary participation (see Figures 18 and 19). Differences between changes in enrollment and in number of degrees earned exist by gender, race/ethnicity, and at two-year and four-year institutions.

Between 1976-77 and 1988-89, undergraduate enrollment of whites in four-year institutions increased 12 percent, and the number of bachelor's degrees whites earned increased only 6 percent. This difference in changes in enrollment and in degrees earned probably stemmed from the fact that students now take longer on average to complete their degrees. In contrast, white enrollment increased 20 percent at two-year institutions, and associate degrees earned increased 3 percent over the same period. The enrollment change relative to the change in degrees may be greater at two-year schools than at four-year institutions because larger proportions of students at the former probably do not intend to earn a degree.[3]

The patterns at both types of institutions are the net result of differences between men and women in enrollment and degrees earned (separately portrayed in Figures 18 and 19). Both enrollment and degrees earned increased among white women; among white men, enrollment increased 3 percent, and the number of degrees awarded declined.

Among blacks, an enrollment increase of 10 percent was associated with a 1 percent decline in the number of bachelor's degrees earned at four-year institutions; at two-year schools, an increase in enrollment of 10 percent corresponded with an increase of 4 percent in associate degrees awarded. These patterns are also the net result of differences between men and women both in enrollment and degrees earned. At two-year and four-year schools, both enrollment and degrees earned declined among black men, but increased among black women.

Among Asian/Pacific Islanders, increases in degrees earned were greater than increases in enrollment at four-year institutions. At two-year schools, Asian/Pacific Islanders also enjoyed relatively large increases in degrees awarded compared to enrollment gains.

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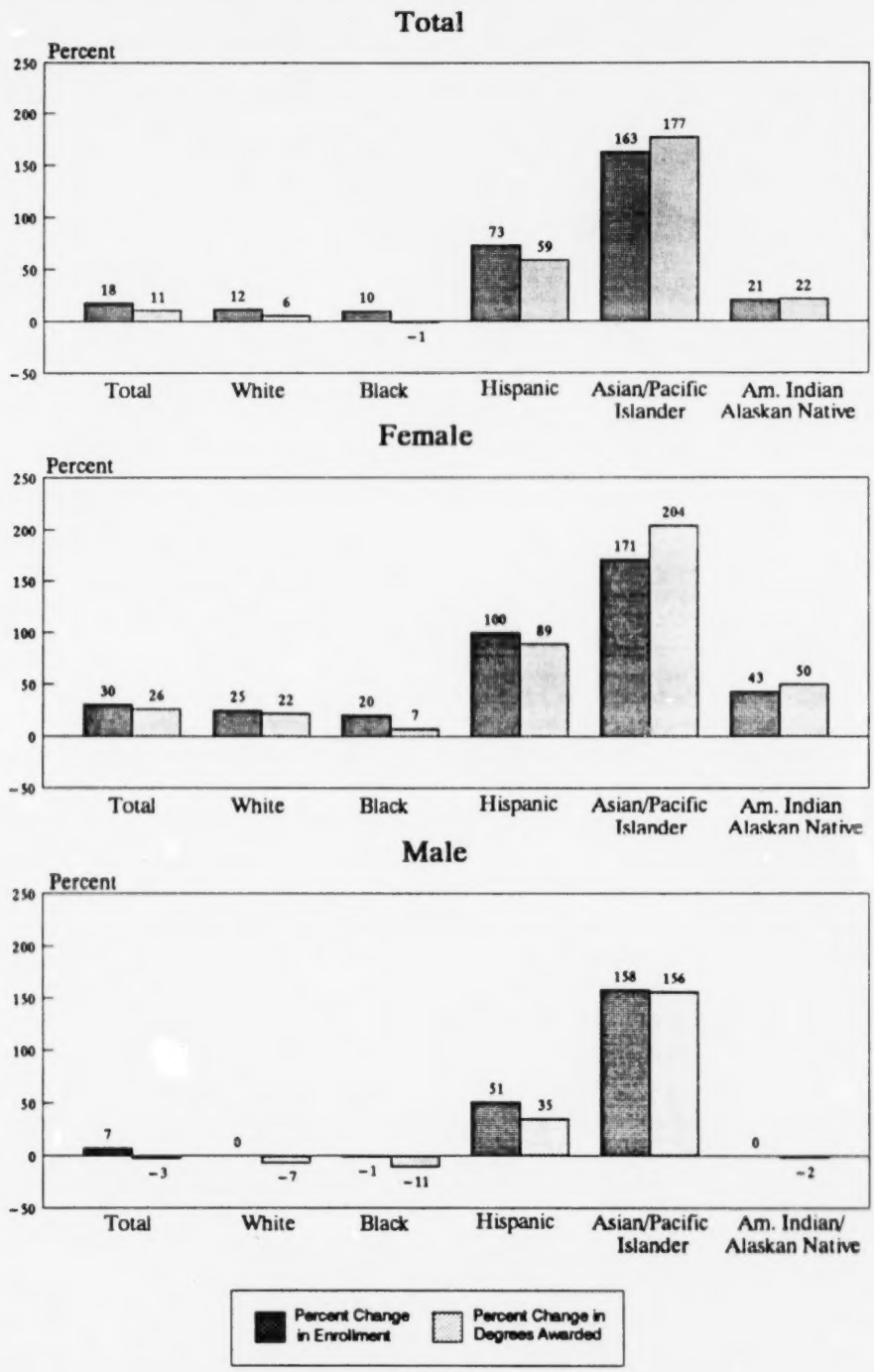
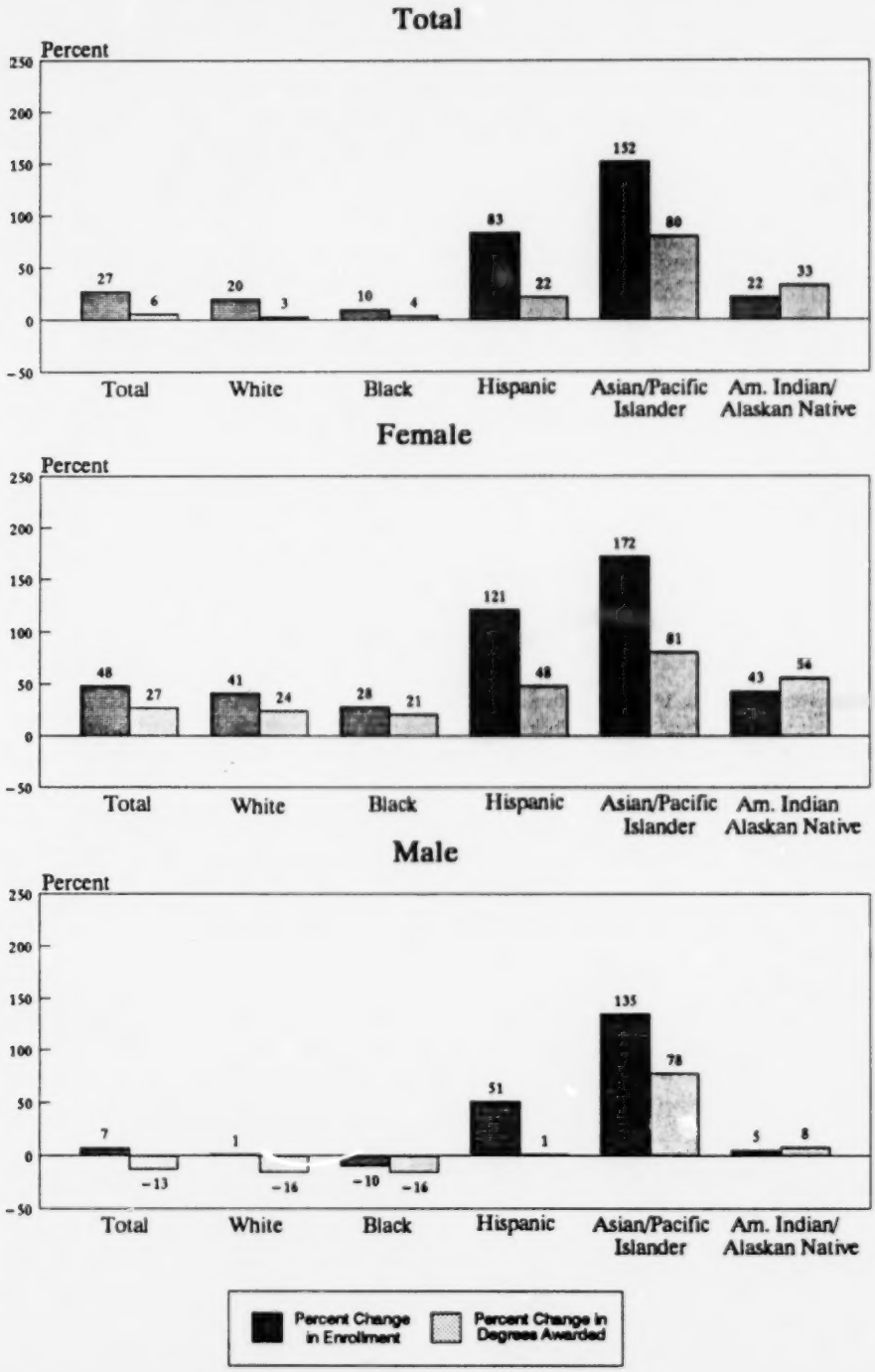
3. Some discrepancy between enrollment and degrees earned can be expected because of the inherent lag between enrollment increases and graduation increases due to the time--presumably at least four years in the case of a bachelor's degree--needed to earn the degree.

Figure 18.
Percent Change in Four–Year Enrollment and in Bachelor's Degrees Awarded, by Race/Ethnicity and Gender, 1976–77 to 1988–89



SOURCE: Congressional Budget Office tabulations based on unpublished data from the U.S. Department of Education, National Center for Education Statistics.

Figure 19.
Percent Change in Two-Year Enrollment and in Associate Degrees Awarded, by Race/Ethnicity and Gender, 1976-77 to 1988-89



SOURCE: Congressional Budget Office tabulations based on unpublished data from the U.S. Department of Education, National Center for Education Statistics.

Among Hispanics, increases in enrollment accompanied increases in degrees awarded at both four-year and two-year institutions. Although the increases in degrees awarded were smaller than the increases in enrollment, Hispanics made relatively large gains. Again, the proportion of students intending to complete a degree may be smaller at two-year schools than at four-year schools.

One important factor in accounting for the discrepancy in most groups between increases in enrollment and degrees earned may well be the growth in the proportion of students enrolled part time. By definition, part-time students take longer to earn the number of credits required to receive degrees. Many of these students are older than the traditional age. They often have other responsibilities that make it impossible for them to become full-time students. Older students may also be more likely to stop out.

One implication of growth in part-time enrollment--possibly coupled with more time stopping out--is that the time elapsed between high school graduation and the award of a degree has increased among all groups but Hispanics. In 1977, about 22 percent of non-Hispanic whites needed more than six years from the date of high school graduation to earn a bachelor's degree, while in 1986, about 26 percent took that long to earn their bachelor's degree. Between 1977 and 1986, the increase was from 33 percent to 38 percent among non-Hispanic blacks and from 23 percent to 33 percent among Asians. In contrast, among Hispanics, the proportion taking longer than six years to earn a bachelor's degree declined from 44 percent to 37 percent during this period.

The findings from this analysis suggest that future improvements in the participation of minorities in postsecondary education will depend on making incremental changes in a variety of areas. Attention must be given to entry rates, full-time or part-time status, age of enrollment, persistence, and other factors.

CHAPTER VI

INCREASING MINORITY PARTICIPATION IN POSTSECONDARY INSTITUTIONS

Not surprisingly, this analysis has found that minority participation in postsecondary education remains below that of whites. That remains true whether enrollment rates are measured as a proportion of the population or the number of high school graduates between the ages of 18 to 24.

Although the total number of minorities enrolled in postsecondary institutions rose between 1976 and 1990, their participation has not increased as much as that of whites. Much of the white increase stems from increases in the enrollment rate of white women, but gender differences appear among both white and minority groups.

Because of the continuing differences in participation between whites and minorities, many observers urge policies to increase the latter's postsecondary enrollment. Among the policies that have been proposed, three basic strategies can be identified.[1] One would assure low-income students as early as the fifth or sixth grade that financial assistance to pay for college will be made available to them if they meet the academic requirements, an assurance implicitly available to many students from more advantaged families. A second strategy would try to increase college entry rates, and possibly persistence rates, by directing a higher proportion of student aid funds to the financially needy, who tend disproportionately to be minority group members. A third approach would try to increase persistence rates by stepping up federal and other funding for support services to disadvantaged college students, a large proportion of whom are minority group members. The first and last of these strategies would probably involve additional funding; depending on how it was shaped, the second might also.

PROVIDE ASSURED ACCESS

A variety of private-sector programs developed in recent years guarantee selected elementary/secondary students that their college expenses will be paid if they complete high school and enroll in college. Many of these

1. Some analysts believe that public intervention in the earliest years of a child's life, perhaps through the federal Head Start program, is the best long-term strategy to increase postsecondary enrollment among minorities. This strategy is not considered here, however.

approaches were inspired by Eugene Lang's "I Have A Dream" program, which grew out of his 1981 offer to an inner-city school's sixth-grade students to pay for their college education if they finished high school. Lang promised to pay the difference between the government-provided aid they got and the cost of attendance at the institution that accepted them. During the intervening years, he also provided various support services, including acting as a personal mentor to the members of that class.[2]

A recent study examined the differences among existing assured-access or guaranteed-tuition programs.[3] All the programs analyzed shared the premise that more than money is needed to change the aspirations, motivations, and achievements of minority youth and to get them to enroll in college. These programs combine financial incentives with supportive services, but the mix differs considerably among the four basic program types. The first, sponsorship programs, operates on the premise that the life style and general situation of disadvantaged minorities place them at risk. As a result, the programs attempt to provide emotional as well as academic and financial support services, including the help of mentors. Some proponents consider intervention no later than elementary school necessary to help disadvantaged students develop the skills, attitudes, and knowledge needed to attend college.

The second type of assured-access approach is the "last-dollar" program, which tends to focus on disadvantaged minorities near the end of their high school career. Such students have already accomplished a great deal, and the program's aim is to provide them with information about college and assistance in getting financial aid. Once a student has gotten all the governmental and private financial aid possible, last-dollar programs make up any remaining differences.

University- or college-based programs are the third type. Although they vary widely, all focus on offering various groups of disadvantaged students a range of services, usually in addition to paying all or some of the tuition at their chosen institution.

The last type of program identified is known as "pay-for-grades." As the title suggests, it operates on the theory that students are not sufficiently motivated to achieve academically. By offering money for specified grades

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2. Among the original group of 61 sixth graders whom Lang sponsored in 1981, 36 are reported to be or to have been enrolled at least part time in college, as of 1988.

3. See General Accounting Office, "Promising Practice: Private Programs Guaranteeing Student Aid for Higher Education," GAO/PEMD-90-16 (June 1990).

(for example, A's or B's in half of all courses) or a certain overall grade-point average, this approach tries to induce students to prepare for and then go to college.

The study concluded that many of these assured-access programs have so far achieved encouraging results at relatively low average costs, ranging from about $100 to $900 per student in each of the precollege years. Because of the limited information on actual outcomes and the short operating periods of many of the programs, however, the report could not identify which elements are responsible for their initial effectiveness. Their success may rest on their exceptional nature, which makes the few students participating in them feel specially favored. If that is the case, a regular national program would not be as effective.

TARGET STUDENT AID MORE TIGHTLY

Most federal student aid is now allocated on the basis of financial need. The formulas used in allocating this aid take into account both the family's financial resources and the cost of attendance at the selected postsecondary institution. The amount that students and parents are expected to contribute is based on their ability to pay as determined by their income and assets. This expected family contribution is supplemented by various types of aid from different sources, including the federal and state governments and postsecondary institutions. The aid may take the form of grants, loans, or jobs.

The current pattern of allocating student aid is consistent with the pursuit of equal educational opportunity in terms of ensuring access to postsecondary education, fostering choice among different postsecondary institutions, and promoting persistence over the years of college attendance. As the student aid system now operates, the amount of aid increases as the family's income decreases and the cost of the education increases.[4] Although this approach to allocating aid is effective in helping additional students to attend the college of their choice, many others, including some who are disadvantaged minority students, find themselves still short of money.

One strategy to promote college attendance by the disadvantaged would be to provide more aid to the most disadvantaged to make sure that they had no unmet financial need. This approach would ensure them not only greater access to college but also more choice. Choice in this sense would

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4. See Congressional Budget Office, *Student Aid and the Cost of Postsecondary Education* (January 1991).

include attending four-year institutions, whether public or private, or private career schools. Because minority students tend to come from families with the lowest incomes, the strategy of increasing the amount of aid targeted toward the most disadvantaged could be especially effective within the current student aid framework.

This strategy could be pursued in terms of any type of student aid--grant, loan, or job. Students consider grants most desirable, since they do not have to be repaid or earned. Ensuring no unmet need through grants would thus probably be a more effective incentive to get a student to attend college than an equal-dollar amount of aid in the form of loans or paid employment. From the perspective of the federal government, however, loans are a much less expensive form of aid than grants or even jobs for meeting the immediate cash flow needs of students, since $1 of student loan costs the federal government only about 30 cents. For the same federal appropriations, more students could be helped to meet their cash flow needs with loans than with grants or jobs.

Congress could more tightly target student aid either by reallocating current funds or by budgeting additional funds. Since reallocation would entail no longer providing aid--or providing substantially less of it--to some types of students, the Congress might choose to provide additional funds. Under the Budget Enforcement Act of 1990, however, doing that would require reducing funding in other areas.

INCREASE STUDENT SUPPORT SERVICES

The two prior strategies focus primarily on increasing the entry of minorities into postsecondary institutions. To address the problem of persistence more directly, other options would increase the range and intensity of support services to disadvantaged minority students already enrolled. As noted earlier, persistence is probably less responsive than entry rate to additional student aid or early intervention.

The federal government already funds the Student Support Services (SSS) program as one of six special programs for disadvantaged postsecondary students.[5] SSS provides a range of services, including instruction; tutoring; academic, career, and personal counseling; supplementary financial aid; services for students with limited proficiency in English; and exposure to

5. Besides Student Support Services, the programs include Upward Bound, Talent Search, Educational Opportunity Centers, Ronald E. McNair Post-Baccalaureate Achievement program, and the Training Program for Special Programs Staff and Leadership Personnel.

cultural events. Program participation is aimed at low-income, first-generation, or physically disabled college students who need help to complete college. In each project setting, two-thirds of those served must be both low income and first generation. In 1990, the program served about 125,000 students at an average cost of $500 per participant.

Although evaluators have perceived problems in implementing this program in the past, research has also found that certain types of support services, especially nonacademic services, are effective.[6] Relatively few students currently benefit from these services. Moreover, in the past little emphasis has been placed on helping students move from two-year to four-year institutions. The Congress could consider bolstering this program so that it could bring the most effective services to more students. Again, however, under the Budget Enforcement Act of 1990, doing so would mean a reduction in funding in other areas.

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6. See General Accounting Office, *Report on the Special Services for Disadvantaged Students* (November 12, 1982).

APPENDIXES

APPENDIX A

AGE-STANDARDIZED ENROLLMENT RATES

Changes in enrollment rates of 18- to 24-year olds can stem from two sources. First, age-specific rates (for example, for each year between 18 and 24) can vary over time, whether calculated relative to population or high school graduates. Second, the rates can remain the same, but the age mix of 18- to 24-year olds can shift. For instance, if there were fewer 18-year olds and more 24-year olds over time, the aggregate enrollment rate for all 18- to 24-year olds would decline--assuming the enrollment rates for each year of age remained constant--because the enrollment rate of 18-year olds is higher than that of 24-year olds.

One way to control for possible changes in the age mix is to calculate what are called age-standardized rates. Although that type of adjustment was not done in the research reports reviewed in Chapter I, this analysis calculated an age-standardized 1988 enrollment rate for 18- to 24-year olds using the 1976 age distribution (to correspond to data on enrollment counts presented above).

In October 1976, the postsecondary enrollment rate (relative to population) of 18- to 24-year olds was 26.7 percent, compared with the age-standardized rate for October 1988 of 31.3 percent. The unstandardized rate for October 1988 was 30.3 percent. These figures indicate that the increase from 26.7 percent to 30.3 percent in unadjusted enrollment rates between 1976 and 1988 stemmed largely from changes in age-specific enrollment rates, not changes in the age mix of 18- to 24-year olds. Because unstandardized and age-standardized rates differ relatively little, unstandardized rates are used in this analysis.

APPENDIX B

SUPPLEMENTARY TABLES

Tables appearing in this appendix contain the data used in constructing the figures that appear in the body of the analysis.

TABLE B-1. UNDERGRADUATE ENROLLMENT IN FOUR-YEAR AND TWO-YEAR DEGREE-GRANTING POSTSECONDARY EDUCATIONAL INSTITUTIONS, FALL 1976 AND FALL 1990 (In thousands of students)

Race/Ethnicity of Student	1976			1990			Percent Change, 1976-1990		
	Total	Female	Male	Total	Female	Male	Total	Female	Male
Four-Year Institutions									
Total	5,439	2,599	2,860	6,530	3,491	3,039	20	34	6
White, Non-Hispanic	4,666	2,190	2,480	5,313	2,811	2,502	14	28	1
Minority	776	402	370	1,217	679	537	57	69	45
Black, Non-Hispanic	514	280	230	615	369	246	20	32	7
Hispanic	143	66	77	288	155	133	101	135	73
Asian or Pacific Islander	90	42	48	273	132	141	203	214	194
American Indian or Alaskan Native	29	14	15	41	23	17	41	64	13
Two-Year Institutions									
Total	3,838	1,884	1,954	5,106	2,935	2,171	33	56	11
White, Non-Hispanic	3,074	1,500	1,570	3,918	2,255	1,663	27	50	6
Minority	759	383	377	1,189	681	507	57	78	34
Black, Non-Hispanic	429	230	200	509	315	194	19	37	-3
Hispanic	210	96	114	414	229	185	97	139	62
Asian or Pacific Islander	79	36	43	212	106	106	168	194	147
American Indian or Alaskan Native	41	21	20	54	32	22	32	52	10

SOURCE: Congressional Budget Office tabulation of unpublished data from the U.S. Department of Education, National Center for Education Statistics.

NOTE: Components may not add up to totals because of rounding and because characteristics of some individuals were not known.

TABLE B-2. PERCENTAGE OF PERSONS AGED 18 TO 24 ENROLLED IN COLLEGE, BY RACE/ETHNICITY AND GENDER, OCTOBER 1972 TO OCTOBER 1990

Year	White		Black		Hispanic Male and Female
	Male	Female	Male	Female	
1972	31.3	21.9	20.9	15.7	13.4
1973	28.6	21.4	18.5	13.7	16.0
1974	28.3	22.4	20.1	16.2	18.1
1975	30.1	23.9	20.3	21.1	20.4
1976	28.8	25.6	22.0	23.0	19.9
1977	28.7	24.4	20.2	22.2	17.2
1978	27.6	23.9	19.6	20.6	15.2
1979	26.5	24.8	19.3	20.3	16.6
1980	27.3	25.2	17.3	20.8	16.1
1981	27.7	25.8	18.8	20.7	16.7
1982	27.9	26.6	18.5	20.9	16.8
1983	28.3	25.8	18.3	20.0	17.2
1984	29.6	26.4	20.3	20.4	17.9
1985	29.3	28.2	20.1	19.5	16.9
1986	29.3	28.0	20.7	23.5	18.2
1987	31.2	29.2	22.6	23.0	17.6
1988	31.4	31.2	18.0	23.8	17.0
1989	31.5	32.2	19.6	26.8	16.1
1990	32.7	32.3	26.1	24.8	15.8

SOURCES: Bureau of the Census, "School Enrollment–Social and Economic Characteristics of Students: October 1989," Current Population Reports, Series P-20, No. 452; and unpublished data.

TABLE B-3. PERCENTAGE OF HIGH SCHOOL GRADUATES AGED 18 TO 24 ENROLLED IN COLLEGE, BY RACE/ETHNICITY AND GENDER, OCTOBER 1972 TO OCTOBER 1990

Year	White		Black		Hispanic Male and Female
	Male	Female	Male	Female	
1972	38.6	26.6	33.0	22.5	25.8
1973	35.1	25.6	27.9	20.5	29.1
1974	34.6	26.8	30.5	23.7	32.3
1975	36.4	28.6	32.8	31.5	35.5
1976	35.4	30.7	35.4	32.0	35.8
1977	35.5	29.1	31.9	31.4	31.5
1978	33.9	28.6	31.9	28.2	27.2
1979	32.8	29.7	31.2	28.3	30.2
1980	33.8	29.9	26.3	28.6	29.8
1981	34.7	30.5	28.2	27.8	29.9
1982	34.4	31.8	28.3	27.7	29.2
1983	35.4	30.6	27.5	26.7	31.4
1984	36.4	31.1	28.9	26.0	29.9
1985	35.8	33.0	27.7	24.9	26.9
1986	36.1	33.0	28.6	29.4	30.4
1987	38.7	34.7	31.7	28.7	28.5
1988	39.4	36.9	25.0	30.5	30.9
1989	39.4	38.2	27.1	33.8	28.7
1990	40.3	38.6	34.4	31.8	29.0

SOURCES: Bureau of the Census, "School Enrollment--Social and Economic Characteristics of Students: October 1989," Current Population Reports, Series P-20, No. 452; and unpublished data.

TABLE B-4. ENROLLMENT IN PROPRIETARY INSTITUTIONS AMONG PERSONS AGED 18 TO 34, BY RACE/ETHNICITY AND GENDER, OCTOBER 1976, 1980, 1989, AND 1990

	1976	1980	1989	1990
	Numbers (Thousands)			
Total	1,139	1,062	1,065	1,076
White, Non-Hispanic	977	846	823	805
Black, Non-Hispanic	92	114	130	109
Hispanic	53	69	89	128
Other	16	34	22	34
Female	525	519	504	518
Male	614	543	561	558
	Distribution (Percent)			
Total	100	100	100	100
White, Non-Hispanic	86	80	77	75
Black, Non-Hispanic	8	11	12	10
Hispanic	5	7	8	12
Other	1	3	2	3
Female	46	49	47	48
Male	54	51	53	52

SOURCE: Congressional Budget Office tabulations of data from the October Current Population Surveys for the years 1976, 1980, 1989, and 1990. Tabulation reflects positive responses to the question "Is...taking any business, vocational, technical, or correspondence courses other than on the job training?" However, college graduates and current college students have been excluded.

NOTE: Racial/ethnic categories are mutually exclusive. Components may not add up to totals because of rounding.

TABLE B-5. COLLEGE ENTRY RATES AMONG 18- TO 24-YEAR OLDS, BY TYPE OF RATE AND BY RACE/ETHNICITY AND GENDER, OCTOBER 1972, 1976, 1980, 1984 1989, AND 1990 (In percentages)

	1972	1976	1980	1984	1989	1990
Rate of Entry (or Reentry) in First Two Years						
Total	15	15	15	16	19	21
White, Non-Hispanic						
Female	12	14	14	16	20	22
Male	19	16	16	19	21	22
Black, Non-Hispanic						
Female	14	14	16	12	16	16
Male	18	16	13	11	14	18
Hispanic	11	20	17	14	15	15
Rate of Entry (or Reentry) in All Four Undergraduate Years						
Total	15	16	15	17	20	21
White, Non-Hispanic						
Female	12	14	14	16	21	21
Male	18	17	16	19	21	22
Black, Non-Hispanic						
Female	13	14	16	13	17	16
Male	17	17	12	12	15	19
Hispanic	12	21	17	14	14	14

SOURCE: Congressional Budget Office tabulations of data from the October Current Population Surveys. See text for definitions and Appendix C for technical details of the rate calculations.

TABLE B-6. PROPORTION OF RECENT HIGH SCHOOL GRADUATES AGED 16 TO 24 ENROLLED IN TWO-YEAR OR FOUR-YEAR COLLEGES IN THE FOLLOWING FALL, BY RACE/ETHNICITY OR GENDER, OCTOBER 1987 TO OCTOBER 1990
(In percentages)

	1987	1988	1989	1990	Average
Total	57	59	60	60	59
White	57	61	60	61	60
Black	52	45	53	46	49
Hispanic	34	57	55	48	49
Female	55	61	62	62	60
Male	58	57	58	58	58

SOURCE: Unpublished tabulations from the Bureau of Labor Statistics, based on data from the October Current Population Surveys conducted by the Bureau of the Census.

NOTES: The four-year average is weighted by population size.

Hispanics may be of any race and are included in the subtotals for whites and blacks.

TABLE B-7. PROPORTION OF RECENT HIGH SCHOOL GRADUATES AGED 16 TO 24 ENROLLED IN COLLEGE IN THE FOLLOWING FALL WHO CHOSE FOUR-YEAR COLLEGES, BY RACE/ETHNICITY OR GENDER, OCTOBER 1987 TO OCTOBER 1990 (In percentages)

	1987	1988	1989	1990	Average
Total	67	63	65	67	65
White	67	63	65	68	66
Black	70	63	60	58	63
Hispanic	59	55	32	35	45
Female	63	63	63	66	64
Male	71	63	68	67	67

SOURCE: Unpublished tabulations from the Bureau of Labor Statistics, based on data from the October Current Population Surveys conducted by the Bureau of the Census.

NOTES: The four-year average is weighted by population size.

Hispanics may be of any race and are included in the subtotals for whites and blacks.

TABLE B-8. UNDERGRADUATE PERSISTENCE RATES AMONG 18- TO 24-YEAR OLDS, BY TYPE OF RATE AND BY RACE/ETHNICITY AND GENDER, OCTOBER 1972, 1976, 1980, 1984 1989, AND 1990 (In percentages)

	1972	1976	1980	1984	1989	1990
Two-Year Persistence Rate						
Total	64	69	68	68	81	76
White, Non-Hispanic						
Female	65	70	68	68	80	75
Male	67	69	72	70	82	77
Black, Non-Hispanic						
Female	41	67	58	53	80	69
Male	60	75	51	70	69	78
Hispanic	56	68	67	66	83	77
Four-Year Persistence Rate						
Total	73	75	75	75	84	81
White, Non-Hispanic						
Female	73	75	74	74	84	80
Male	75	75	78	79	85	82
Black, Non-Hispanic						
Female	56	72	63	63	86	78
Male	69	82	63	71	78	80
Hispanic	65	70	67	70	84	80

SOURCE: Congressional Budget Office tabulations of data from the October Current Population Surveys. See text for definitions and Appendix A for technical details of the rate calculations.

NOTE: Racial/ethnic categories are mutually exclusive.

TABLE B-9. PROPORTION OF 25- TO 29-YEAR OLDS WHO HAVE COMPLETED TWO OR FOUR YEARS OF COLLEGE, BY RACE/ETHNICITY AND GENDER, OCTOBER 1972, 1976, 1980, 1984, 1989 AND 1990 (In percentages)

	1972	1976	1980	1984	1989	1990
Two or More Years Completed						
Total	30	36	36	36	37	38
White, Non-Hispanic						
Female	27	33	37	38	42	43
Male	38	44	42	38	39	41
Black, Non-Hispanic						
Female	14	19	24	28	25	25
Male	18	24	25	28	30	27
Hispanic	10	15	17	18	18	17
Four or More Years Completed						
Total	20	23	23	22	23	23
White, Non-Hispanic						
Female	19	23	23	24	26	26
Male	26	28	28	25	25	26
Black, Non-Hispanic						
Female	8	10	12	13	11	11
Male	10	12	14	12	15	14
Hispanic	4	6	9	8	9	9

SOURCE: Congressional Budget Office tabulations of data from the October Current Population Surveys.

NOTE: Racial/ethnic categories are mutually exclusive.

TABLE B-10. ASSOCIATE AND BACHELOR'S DEGREES AWARDED, BY RACE/ETHNICITY AND GENDER, 1976-77 TO 1988-89 (In thousands of awarded degrees)

	1976-77			1988-89			Percentage Change		
	Total	Female	Male	Total	Female	Male	Total	Female	Male
Bachelor's Degree									
Total	902	419	483	988	524	464	10	25	-4
White, Non-Hispanic	808	370	438	858	452	407	6	22	-7
Minority									
Black, Non-Hispanic	59	33	25	58	36	22	-1	7	-11
Hispanic	19	8	10	30	16	14	59	89	35
Asian or Pacific Islander	14	6	8	38	19	20	177	204	156
American Indian/Alaskan Native	3	2	2	4	2	2	22	50	-2
Associate Degree									
Total	401	194	207	424	244	180	6	26	-13
White, Non-Hispanic	342	164	178	353	203	150	3	24	-16
Minority									
Black, Non-Hispanic	33	18	15	34	22	13	4	21	-16
Hispanic	17	8	9	20	11	9	22	48	1
Asian or Pacific Islander	7	3	4	12	6	6	80	81	78
American Indian/Alaskan Native	2	1	1	3	2	1	33	56	8

SOURCE: Congressional Budget Office tabulations of unpublished data from the U.S. Department of Education, National Center for Education Statistics.

NOTES: Components may not add up to totals because of rounding.

APPENDIX C

A TECHNICAL NOTE ON ENTRY AND PERSISTENCE RATES IN POSTSECONDARY EDUCATION

This appendix describes the technical basis for estimating the undergraduate entry and persistence rates presented in the paper. First, it identifies the composition of enrollment and defines its elements. Second, it describes the analysis of enrollment in terms of stocks and flows. Finally, it presents the approach that was developed to estimate entry and persistence rates based on data from the October supplement of the Census Bureau's Current Population Survey.

Postsecondary enrollment can be divided a number of ways. One approach relates enrollment in the current year (t) to enrollment in the preceding year (t-1) as:

$$\text{Enrollment}(t) = \text{Enrollment}(t-1) + \text{Entrants}(t) - \text{Leavers}(t)$$

where entrants are those who were not enrolled in college last year (t-1), and leavers are those who were enrolled last year but are not this year (t).

The equation notes that enrollment in the current year equals that in the last year plus new students or entrants and minus those who do not return. By rearranging the equation, this year's enrollment can thus be divided into entrants and persisters:

$$\text{Enrollment}(t) = \text{Entrants}(t) + \text{Persisters}(t),$$

$$\text{where Persisters}(t) = \text{Enrollment}(t-1) - \text{Leavers}(t)^{1}$$

The distinction between entrants and persisters has public policy significance because different policies may be appropriate with respect to fostering the enrollment of new students, as distinct from the retention of current students. Student aid policy focuses primarily on the former; the latter is more the

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1. More formally, the probability of postsecondary enrollment this year is a function of the probability of entering college this year plus the probability of persisting in college last year given enrollment last year, or:

$$Pr(Enrol[t]) = Pr(Entry[t]) + Pr(Enrol[t]|Enrol[t-1])*Pr(Enrol[t-1])$$

concern of institutions that want to keep the students who have already enrolled and possibly already received student aid.

Further distinctions can be made among entrants and persisters. For example, among entrants there are first-time students (never enrolled in college before) and reentering students (not enrolled last year but enrolled at some previous time). Again, more formally:

Entrants = First-time enrollers + Returning students

Leavers can also be broken down into two types:

Leavers = Graduates + Noncompleters

In addition, two types of noncompleters can be distinguished:

Noncompleters = Stopouts + Dropouts

The distinction between stopout and dropout becomes apparent only with hindsight--after a former student has become a returner (and thus was a stopout) or fails to return (and thus is a dropout).

Those different categories of enrollment can be identified in tabular form by examining college enrollment status this year and in previous years. In Schematic C-1, E(t) and N(t) refer to those enrolled and not enrolled this year; E(t-1) and N(t-1) refer to those enrolled and not enrolled last year; and E(B) and N(B) refer to those enrolled and not enrolled before last year.

That classification can be used with various population universes.[2] For example, by restricting the population of interest to those who have not earned a bachelor's degree (completed four years of college), those in cells 5, 6, and 7 will only be dropouts and not graduates (although the dropouts could turn into stopouts if they return to college). Further restrictions can also be imposed on the population used for analysis: for example, in terms of current year of enrollment (freshman, sophomore, etc.), by highest level of college attainment, age, and other characteristics. Enrollment can also be classified in terms of the type of institution in which the student enrolls (or from which the student drops out), such as a two-year or four-year private, public, or proprietary (for-profit) institution; attendance status; and level of attendance, that is, undergraduate or graduate.

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2. In the body of the paper, two populations are used: for calculating the two-year rate, those who had completed less than two years of college; and for calculating the four-year rate, those who had completed less than four years of college.

SCHEMATIC C-1. COLLEGE ENROLLMENT STATUS

Enrollment Status This Year	Enrollment Status Last Year: E(t-1) — Ever Enrolled Before Last Year: E(B)	E(t-1) — Ever Enrolled Before Last Year: N(B)	N(t-1) — Ever Enrolled Before Last Year: E(B)	N(t-1) — Ever Enrolled Before Last Year: N(B)
E(t)	(1) Persister (soph to jr or jr to sr)	(2) Persister (frosh to soph)	(3) Stopout (was a dropout last year)	(4) First-Time Student (may or may not be recent HS grad)
N(t)	(5) Dropout (at least for now, or a grad)	(6) Dropout (at least for now, or a grad)	(7) Dropout (at least for now, or a grad)	(8) Nonattender

STOCKS AND FLOWS

A basic distinction underlying Schematic C-1 is that between stocks and flows. Stocks refer to the number of persons in each category. The basic stock categories are enrolled and not enrolled (in the year of reference).

Flows are defined as changes from one stock to another--in the case at hand, the number of people moving into the enrolled category from nonenrollment (entrants) and those moving into nonenrollment from enrollment (leavers). One way to clarify these ideas is by collapsing Schematic C-1 a bit and reproducing it as Schematic C-2.

SCHEMATIC C-2. ENROLLMENT FLOW CATEGORIES

Enrollment Status Last Year	College Enrollment Status This Year: Enrolled E(t)	College Enrollment Status This Year: Not Enrolled N(t)	Total
Enrolled E(t-1)	1. EE(t) (Persisters)	2. EN(t) (Dropouts/Graduates)	E(t-1)
Not Enrolled N(t-1)	3. NE(t)	4. NN(t) (Entrants)	N(t-1)
Total	E(t)	N(t)	

The symbols in each cell represent the number of people making the different transitions from last year to this year. For example, EN(t) represents the number enrolled last year (denoted by the first letter, E) who are not enrolled this year (denoted by the last letter, N). They are the leavers (dropouts or graduates).

In this analysis, two flow rates or transition probabilities are of primary concern:

I. $NE(t)/N(t-1)$ = the probability of enrolling,

as defined by the number of people not enrolled last year but enrolled this year [NE(t)] divided by the number of people not enrolled last year [N(t-1)]; and:

IIa. $EN(t)/E(t-1)$ = the probability of leaving, or its inverse,
IIb. $1 - EN(t)/E(t-1) = EE(t)/E(t-1)$ = the probability of persisting,

where the probability of leaving is defined as the number of people who were enrolled last year but not this year [EN(t)] divided by the number enrolled last year [E(t-1)].

These flow rates are important because they underlie changes or differences in the enrollment patterns of different populations. That is, changes or differences in enrollment rates can be linked to those in transition probabilities into or out of college. For example, if black youth have a higher probability than whites of leaving college, even if the two groups' probability of entering college was the same, blacks' enrollment rate would be lower.

DATA ON STOCKS AND FLOWS

Enrollment stocks are relatively easy to measure and widely available. Sources include the Department of Education's National Center for Education Statistics (NCES) and the Department of Commerce's Bureau of the Census. Flow data, on the other hand, require tracking students over time and are less readily available. NCES does have longitudinal data appropriate for calculating postsecondary enrollment flow rates for the high school class of 1972 and for the high school sophomore and senior cohorts of the High School and Beyond study (high school classes of 1980 and 1982). C. Dennis Carroll of NCES has prepared a number of publications tracking students through changes in enrollment status. In addition, the Bureau of the Census' Current Population Survey (CPS) questions respondents on the enrollment status of household members one year earlier in its annual October school enrollment supplement. Robert Kominsky of the bureau has used such data to develop high school dropout rates. (The CPS is a survey of about 60,000 households designed primarily to collect monthly employment data.)

In this report, CPS data are used to divide postsecondary enrollment into the categories defined by Schematic C-2 and then to calculate flow rates into and out of college.[3] The data were tabulated in two phases. In the first, current students were divided into entrants and persisters based on data collected through three questions asked of respondents in the October CPS supplement (see Schematic C-3). The first question concerns level of college

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3. CPS data could also be used to divide the population into the categories defined by Schematic C-1. Enrollment status the year before last could be determined on the basis of the CPS items on highest grade attended and whether it was completed in conjunction with college enrollment status last year. Using the categories in Schematic C-1 would permit a definition of entrants and persisters (and hence nonpersisters) different from the one presented in this paper. For example, entrants could be defined as those who have never been in college before but are enrolled this year. Persisters could be defined as those who are in college this year and have been at some time in the past. Such an approach would broaden the category of persisters to include some of those defined as re-entrants in the analysis presented in this paper (those in cell 3, the stopouts). As a result, nonpersisters would be defined as those who had ever been enrolled but had not completed a degree, instead of as those who are not enrolled this year but who were enrolled last year. That approach was not used in the analysis because the primary focus was on transitions from one year to the next.

SCHEMATIC C-3. CPS DATA ANALYSIS CATEGORIES: CURRENT STUDENTS

Highest Level of Current College Enrollment	Attended College or School Last October: Yes — Recent HS Graduate (current year)	Yes — Not Recent Graduate (previous years)	No — Recent High School Graduate	No — Not Recent HS Graduate
Freshman	Entrant (1)	Persister (2)	Void (3)	Entrant (4)
Sophomore and Above	Void (5)	Persister (6)	Void (7)	Entrant (8)

enrollment, which is divided into freshman (Y1 or first-year college) and sophomores through seniors (Y2 through Y4). The second involves whether the college student was enrolled in a regular college or school in October one year earlier. The third solicits the year of high school graduation, which was used to divide the population into recent high school graduates (graduated in the same year as the survey or previous graduates). Further division of entrants and persisters would be possible if additional data were available on the month and year of initial college entry and of graduation; such data are not available, however.

In the second phase, respondents not currently enrolled in college (and at least high school graduates) are separated into those who were and were not enrolled in college last year (see Schematic C-4). This division uses the CPS items on highest level of education attended and completed, current college attendance status, school or college attendance status last year, and year of high school graduation. The top part of the table (banner) presented in Schematic C-4 is identical to the one in Schematic C-3, but the side part

SCHEMATIC C-4. CPS DATA ANALYSIS CATEGORIES: NONENROLLED POPULATION

Highest Level of Educational Attendance	Attended College or School Last October: Yes — Recent HS Graduate (current year)	Yes — Not Recent Graduate (previous years)	No — Recent High School Graduate	No — Not Recent HS Graduate
High School Graduate	No Entry (9)	Void (10)	Void (11)	No Entry (12)
College Freshman or Above	Void (13)	Leaver (14)	Void (15)	No Entry (16)

(stub) is different. Those in the "no entry" cells were not in college this year or last and have never attended college in the past. Those in the leaver cell were in college last year but are not there currently.[4]

Because of the numerous paths through the various high school and regular postsecondary education systems across the United States, this division of college enrollment probably misclassifies some individuals. One potential cause of misclassification is that data on individuals are only collected in the CPS on an annual basis in October, but educational status can change at several points during the years. More than one change in status between successive Octobers is also possible. The number of misclassifications will, however, probably be relatively small and sometimes offsetting. Moreover, because the study's primary interest lies in trends--and because little reason exists to believe that such misclassifications are changing over time--any bias in the findings concerning trends should be minimal.

4. In using CPS data, some erroneous (that is, logically inconsistent) data were found. As a result, the data required additional editing based on the student's age and expected year in school.

Figures from the Bureau of Labor Statistics on college entry among recent high school graduates can also be placed in the schematic. Schematic C-1 has them in cell 4, where the graduates are a subcategory of all new entrants. In Schematic C-3, they are found primarily in cell 1 (although some may be in cell 5 if they are advanced placement students).

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